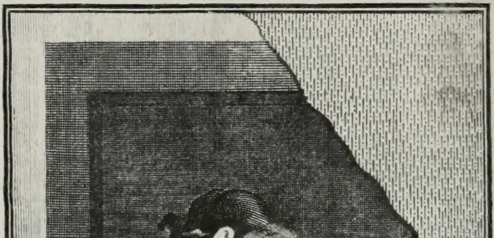

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In all the ſeveral
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But alſo containing the
THEORY and PRACTICE
Of the
Various BRANCHES thereof, requiſite to be known by

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CARPENTERS,	PAINTERS,	CARVERS,
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Nicholas Hawkſmoo
John James,
James Gibbs.

Printed for A. BETTESWORTH and C. HITCH, at the *Red-Lion* in *Pater-noſt Row*; and S. AUSTEN, at the *Angel* and *Bible* in *St. Paul's Church-Yard*

Dictionarium Polygraphicum:

Or, The Whole

BODY of ARTS

Regularly Digeſted.

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VOL. II.

LONDON;
Printed for C. HITCH, and C. DAVIS, in *Pater-noſter Row*; and
S. AUSTEN, in *St. Paul's Church-Yard.* MDCCXXXV.

THE
Polygraphick Dictionary.

J.

JACINTH
HYACINTH } Is a precious ſtone, ſo call'd from the reſemblance it bears in colour to the purple flower call'd a *Hyacinth*.

There are four ſorts of *Jacinths*: viz. Thoſe intermixt with a vermilion colour; thoſe of a ſaffron colour; thoſe of an amber colour; and laſtly thoſe of a white intermixed with a pale red.

Jacinths again are diſtinguiſh'd into *oriental* and *occidental*; the *oriental Jacinths* come from *Calicut* and *Cambaya*, and are equal in hardneſs to the *oriental Amethyſt*; the *occidental* are found in *Bohemia* and *Portugal*, which are a degree ſofter.

The *Jacinth* graves or cuts fine, and would be more uſ'd for Seals, *&c.* but that the graving oftentimes coſts more than the ſtone.

The ancients uſed it for amulets and taliſmans; and wore it about their neck, or ſet in rings, *&c.* and ſuppos'd it to have the virtue of preſerving them from the Plague, *&c.*

To make a fair JACINTH. It is ſcarce poſſible to make *Jacinth* without lead, in its compoſition, wherefore you muſt put in an ounce of powder of *cryſtal*, 2 ounces and a half of *minium*, with 24 grains of *verdigreaſe*, 2 drachms of *ſublimate*, and 5 or 6 leaves of *ſilver*; the whole reduced to fine powder in a braſs mortar, and ſearced through a fine ſieve; mix them well together, and put them in a crucible, covered with another, and well luted; then bake and purify it in a glaſs-houſe furnace for 12 hours. Then take it off the fire, and pound it again in a braſs mortar to a fine powder, ſifting it through a fine ſieve; then put it in a new crucible, which cover and lute well, and ſet it again in the glaſs-houſe furnace for 24 hours, and 12 more in the annealing furnace: the crucible being cold, take out the matter, which will be of a fine *Jacinth* colour, which cut and poliſh.

Another fairer JACINTH *colour*. If this *Jacinth* be fairer, it is alſo more brittle than the other, becauſe it has more *lead* in it. To make it, take an ounce of *cryſtal* in powder, 3 ounces of *minium*, and 45 or 46 grains of *verdigreaſe*; mix well theſe matters together, after having pounded them well in a braſs mortar, and ſearced them through a fine ſieve; then put them in a crucible covered, and luted, in a glaſs-houſe furnace, where let it ſtand 12 hours.

Then take out the matter, which pound and ſift well; then put that powder in another crucible, covered and luted, which put in the ſame glaſs-houſe furnace for 24 hours, and the matter will be well baked.

Then take out the crucible to put in the annealing furnace, and 12 hours after take your matter out of the crucible, which will be of a fine *Jacinth* colour, and may be wrought.

Another oriental JACINTH *colour*. This colour will be of a very fine *reddiſh yellow*, ſuch as is the true oriental *Jacinth*.

To make it, take 1 ounce of *cryſtal* in powder, 3 ounces of *minium*, 1 ounce of *arſenick*, prepared as for the *Topaz*, and 1 ounce of *Vitriol* calcined *ad rubedinem*, the whole reduced to a fine powder in a braſs mortar, proceeding moreover as in the preceeding chapter.

JADE, a greeniſh ſtone, bordering on the colour of olive, much eſteem'd for its hardneſs, which exceeds that of *porphyry*, *agate*, and *jaſper*, and is only to be cut with the powder of *Diamond*.

It is mightily eſteem'd by the *Turks* and *Poles*, who all adorn their fine works with it, and eſpecially the handles of their ſabres.

Mr. *Bernier* tells us, that the caravans of *Thibet* carry it to *Cachemire*, and that the *Galibis* prize it as highly as a diamond.

JANUARY is repreſented [in *Painting*, &c.] all in white, like ſnow or hoar froſt, blowing his fingers; in his left arm a billet, and *Aquarius* ſtanding by his ſide.

JANUS is repreſented [in *Painting*, &c.] with two faces; holding in one hand a long rod or wand; and in the other a key.

The two faces of *Janus* ſignify time; the one being withered and hoary, ſhews time paſt; the other youthful and bearded, time to come.

Pliny tells us, that *Numa Pompilius* King of the *Romans* cauſed the ſtatue of *Janus* to be hew'd out in ſuch ſort, that the fingers of his hands appear'd to be 365, to repreſent the number of the days in the year, and that he was god of it; whereupon the firſt month in the year was called *Januarius*, from their God *Janus*.

Under the feet of *Janus* are oftentimes plac'd 12 altars referring to the 12 months of the year, or ſigns of the zodiac, thro' which *Sol* makes his revolution.

The *Phenicians*, as is reported by *Cicero* and *Macrobius*, repreſented *Janus* by the form of a ſerpent, holding its tail in its mouth, and continually turning round.

Some repreſented *Janus* with four faces, as were thoſe ſtatues which were found in divers places in *Tuſcany*.

By the 4 faces are ſignified the four ſeaſons of the year; *ſpring*, *ſummer*, *autumn*, and *winter*: which ſome think to be thoſe of *Venus*, *Ceres*, *Bacchus*, and *Vulcan*; and ſometimes the winds with *Æolus* their commander.

JAPANNING. *The method of preparing woods for* JAPANNING. 1. Take Plaiſterer's ſize, diſſolve it over the fire, making it pretty warm; and mix with it whiting finely powdered, 'till it is of a good body, but not too thick.

2. Take a bruſh of hog's hair, and with it lay your work over with the former mixture; letting it dry very well: and repeat this ſo often 'till you have hid all the hollowneſſes, crevices, pores, and grain of the wood, letting it be thoroughly dried between every laying.

3. When it has at laſt grown thoroughly dry, rub all the work over with a wet rag, 'till you have rendred it as ſmooth as is poſſible. N. B. *This is called* Water-planing.

4. When it is grown thoroughly dry again, ruſh it even and ſmooth, and as cloſe to the grain as poſſibly may be.

5. After this, waſh over the work twice with the thickeſt of *Seed-Lac Varniſh*; letting it ſtand to dry each time, and if it is not ſmooth, ruſh it again, to make it ſo. *See* SEED-LAC VARNISH *in letter* V. *And* RUSH *in letter* R.

6. In a day or two's time, you may varniſh it over with black, or what other colour you deſign, as is directed; and when it is dry, finiſh it by poliſhing it.

7. After the ſame manner carved figures are to be prim'd; alſo frames, cabinets, ſtands, tea-table, *&c.* ſaving that theſe are not to be poliſhed, and therefore do not require ſo great a body of varniſh.

8. But for the tops of tables, boxes, ſides of cabinets, *&c.* when the wood is ordinary and rough-grain'd, as deal, oak, *&c.* you may uſe common or Joiner's glue, diſſolv'd in water, 'till 'tis fine and thin; into which put the fineſt ſaw-duſt, 'till it is indifferently thick.

9. Then with a bruſh, fit for that purpoſe, lay your wooden work over with it; and when it is dry, repeat it ſo often 'till all the roughneſs and grain of the wood is ſufficiently hidden.

10. After 2 or 3 days let it be ſcrap'd with a Cabinet-maker's *ſcraper*, as pear-tree and olive wood are done, to make it as ſmooth and even as poſſibly may be, then varniſh it as before directed.

This, if well done, might not come behind any other work, either for beauty or durability.

11. But however thoſe woods, that are firm and cloſe-grain'd, are chiefly and only to be choſen; of all which pear-tree is in the higheſt eſteem.

Of taking off JAPAN PATTERNS. 1. Having laid on your ground, whether black or any other colour, and rendered it fit for drawing; and having your draught or deſign before you in paper, either drawn or printed, do as follows.

2. Rub this draught or print all over the back ſide with whiting or fine chalk, wiping off all that whiting or chalk, which lies looſe and like duſt upon the paper.

3. Then lay this paper, whether it be a drawing or a print, upon the table, or piece of *varniſh'd work*, with the whited ſide next to it; and upon the very place, where you would have that figure made, and with a needle (not ſharp pointed) fix'd into a ſmall wooden handle (call'd a tracing-pencil) go over and trace as much of the drawing or print, as you think fit.

4. Take the moſt material and outward ſtrokes, and all that you think will be hard and difficult to draw without a Pattern.

5. Thus by means of the whiting or chalk, you will have the groſs form of the draught or print, and ſuch other lines, as will be a direction to you how to perform, what you would have done.

6. Having done this, if you draw in gold ſize, uſe fine *Cinnabar*, mixt with gum water, and with a ſmall pencil dipt into it, go over all the lines made by the chalk or whiting; this will hold it on ſo as not to come off; but you may work upon it with your gold ſize at pleaſure.

7. If you work your metals or colours in gum water, then *trace* or draw over your deſign with *gum-water*, mix'd with *gold* or *braſs duſt*; by either of theſe ways, when it is dry and finiſh'd, *viz.* either in *gum-water* or *gold ſize*, you may compleat and finiſh your work.

The method of JAPANNING WOOD *with* BLACK. 1. The wood being cloſe-grain'd, well-wrought, and ſmooth, ruſh it as much ſmoother as you can, and keep it in ſome warm place, or not far from a fire; but you muſt be ſure, while you are varniſhing, not to let your work be ſo near the fire as to burn, ſcorch, or bliſter it; for which injuries, if they happen, there is no other remedy but ſcraping off, and varniſhing the piece anew: therefore it is beſt to work in a ſtove, if it can be, becauſe it gives an even and moderate heat to all parts of the room.

2. Then take this following varniſh.

Take of the thickeſt *Seed-Lac Varniſh* 6 ounces, *Lamp-Black* enough to colour it, mixt in a gallipot, and with it firſt waſh over or varniſh your piece three times, letting it dry thoroughly between each time: again, with the ſame varniſh waſh it over 3 other ſeveral times, letting it thoroughly dry between each time; and ruſh it ſmooth between each of them.

3. Take the following varniſh. Of the thickeſt *ſeed-lac varniſh* 6 ounces, *Venice turpentine* 1 ounce, and waſh over your work with it 6 times, letting it ſtand 12 hours between the 3 firſt and the 3 laſt varniſhes.

4. Your work being thus far done, take the following *Japan varniſh.*

Take of the fineſt *ſeed-lac varniſh* 6 ounces, of *lamp-black* a ſufficient quantity, mix them, and with that let your work be varniſh'd 12 times, ſtanding 12 hours between the firſt 6, and the laſt 6 waſhings.

Then let it ſtand to dry for 6 or 7 days; after which, poliſh it with *Tripoli*, and a rag as directed.

5. But in poliſhing you muſt work at it, 'till it is almoſt ſmooth, and then let it ſtand by for 2 days; then poliſh it again almoſt enough, and again let it be 6 days, and then finiſh the poliſhing of it; and then clear it up with *oil* and *lamp-black*, and ſo will you have a good *black Japan*, ſcarce at all inferior to the true *Japan.*

Another BLACK JAPAN. 1. Lay your *black* as before directed in the 2d and 3d articles preceeding, then take of the *Japan varniſh* following, *viz.* of the fineſt *ſeed-lac varniſh*, and of the beſt *white varniſh* (*See* WHITE VARNISH) of each 3 ounces, mix them well, and then tincture it with *lamp-black*, with which varniſh your work 7 or 8 times, letting it ſtand 24 hours between each time to dry, and then repeat it 4 or 5 times more, keeping it but juſt warm.

2. Then let it ſtand 2 days, and waſh it 6 or 7 times with fine *ſeed-lac varniſh* only; and after 6 or 7 days poliſh it as before directed.

3. *If your work ſhould after a little time grow dull, cloudy, and miſty*, That may be remedied by a ſlight poliſh, and clearing it up afterwards: becauſe this dullneſs might be caus'd by reaſon that either your *varniſh* was not yet thoroughly dry, or that it was not laid thick enough on.

4. If *it is from the firſt cauſe*, a new poliſhing mends it; if *it is from the latter cauſe*, you muſt mend it by 5 or 6 waſhes more of fine *ſeed-lac varniſh*, and then poliſh it again as before.

5. It is alſo to be noted, that in this and all other *Japan* works, you muſt never ſtrike your pencil twice over the ſame place, becauſe it will make your colours or varniſh lie rough and ugly; but every ſtroke waſh a new place, carrying a ſteady, quick, and even hand, beginning at the middle of the table,

and ſo drawing your bruſh to either end, 'till the whole piece has been paſſed over.

WHITE JAPAN. 1. In doing this, great care muſt be taken that nothing may come near that will foul or ſoil it.

In the firſt place, lay the ground with iſing-glaſs ſize, (*ſee* ISING-GLASS and SIZE) mixt with as much Whiting ſcrap'd into it as will make it of a reaſonable thickneſs, or ſo long, till that by a Stroke your pencil being dipt into it, will whiten the Plain of your work; but let it be neither too thick nor too thin; let the whiting be well mix'd with your ſize, with your Hogs-Hair Bruſh.

2. Whiten your work once over with it, and when it is thoroughly dry, do it over again; and when dry, repeat it the third time, after which let it ſtand to dry for 12 or 24 Hours, covering it from duſt.

3. Then with ſome *Dutch* ruſhes, let it be ruſh'd as near the grain of the Wood as you ſee fitting.

4. Take freſh *Iſing-glaſs ſize* what quantity you pleaſe, and flake white ſo much as will make the ſize be of a fair body, mix them well together, and with this go over your work 3 ſeveral times, letting it be thoroughly dry between each time, and afterwards ruſh it very ſmooth.

5. Then take *white Starch* boil'd in fair water, till it is ſomewhat thick, and with it, almoſt blood-warm, waſh over the whole work twice, letting it dry between each time, and ſo let it ſtand for a Day or two.

6. It being firſt waſh'd with rectified ſpirit of wine, to clear it from the duſt, dip a pure clean pencil into the fineſt white varniſh, (*ſee* WHITE VARNISH) and do over the work 6 or 7 times; and 2 days after, varniſh it over again the ſame number of times; if this be well done, it will give it a finer gloſs than if it were poliſh'd; but if it be not cleanlily and nicely done, poliſhing will then be neceſſary, for which reaſon you muſt give it 5 or 6 varniſhings more.

7. If this laſt is well done, it will not ſtand in need of poliſhing, and then 2 waſhes more will do: but if it requires poliſhing, you muſt then give it 3, and allow it a week's time to dry in, before you begin to poliſh.

8. *In Poliſhing* you muſt make uſe of the fineſt *Tripoli* and rags, not too wet nor too dry, with a light and gentle hand, and in clearing (inſtead of lamp-black and oil) you muſt uſe putty and oil, and conclude with white ſtarch mix'd with oil, to finiſh it.

9. But there are ſome perſons, who wholly reject this work with ſize, liking that only which is perform'd with varniſh, and therefore ſuch may, if they pleaſe, uſe the ***White Japan Var-***

niſhes (*ſee* WHITE JAPAN VARNISH) exactly according to the method laid down for the black; and this will not be ſo ready to crack or peel off.

Common RED JAPAN. 1. Take iſing-glaſs ſize, or rather the thickeſt *ſeed-lac varniſh* (as ſome adviſe, becauſe it will not then break off in poliſhing, as that mix'd with ſize commonly does, beſides it better helps to bear the body of varniſh, which muſt afterwards be laid over it) as much as you pleaſe, fine pure *vermilion* a ſufficient quantity, as diſcretion ſhall direct.

2. Warm your work by the fire, and with a bruſh varniſh it with the former mixture, doing it over 4 times, and letting it dry between every time; after which, ruſh it ſmooth.

3. This being done, waſh it over 8 times with *ordinary ſeed-lac varniſh*, and ſet it by for 12 hours; then ruſh it again but ſlightly, to make it look ſmooth.

4. And laſtly, for an exquiſite outward covering, waſh it 10 times with the beſt *ſeed-lac varniſh*; let it lie 7 days to dry, and then poliſh it with *Tripoli*, and clear it up with oil aud lamp-black.

Deeper or dark RED JAPAN. Firſt lay on your common red, (as before directed) then take thick *ſeed-lac* varniſh, what quantity you pleaſe, and fine *ſanguis draconis* in fine powder, a ſufficient quantity, mix it by little and little with the varniſh, and a very ſmall matter of it will extremely heighten your colour, and every waſh will render it deeper.

When the colour is almoſt as you deſign, forbear the uſing any more of the *ſanguis draconis*, becauſe the after-layings of the *ſeed-lac* varniſh will heighten it.

Then conſider how many varniſhings are ſtill to be laid on, and accordingly uſe your *ſanguis draconis*, finiſhing the work, as is directed in the former *common red Japan*.

A pale RED JAPAN. Uſe the following *pale red Japan varniſh*.

Take *vermilion*, what quantity you pleaſe, mix it with ſo much white lead as to make it of the degree of paleneſs you would have it, or rather paler, becauſe the varniſh will heighten it; mix this with ſeed-lac varniſh, and waſh your work over with it ſeveral times, letting it dry between every time, and proceed as you did before as to the *common red varniſh*.

Where take notice, that in making this mixture, you muſt conſider how many times you are to varniſh after your red is laid on; for if there be many, then know, that they will increaſe and heighten the colour, for which reaſon you muſt make your colour of a degree of paleneſs accordingly.

BLUE JAPAN. 1. Take gum water, what quantity you pleaſe, and of white lead a ſufficient quantity, grind them well upon a marble, take *Iſing-glaſs* ſize, what quantity you pleaſe, and of the fineſt and beſt ſmalt a ſufficient quantity; mix them well together, then add to them of the white lead ground (as before) ſo much as will give it a ſufficient body, mix all together to the conſiſtence of a paint.

2. Do your work over with this mixture 3 or 4 times, till you perceive the *blue* to lie with a good and fair body, letting it dry thoroughly between each time; if your blue is too pale, put more *ſmalt* among your ſize, without any *white lead.*

3. Then ruſh it over ſmooth, and go over it again with a ſtronger *blue*, and when it is thoroughly dry, waſh it 3 times over with the cleareſt Iſing-glaſs ſize alone; and let it ſtand for 2 days to dry, covering it.

4. Then warm your work gently at the fire, and with a Pencil varniſh your work over with the fineſt white varniſh, repeating it 7 or 8 times, letting it ſtand to dry 2 days, as before. After which, repeat again the third time the waſhes 7 or 8 times in like manner.

5. Let it now ſtand to dry for a Week, and then poliſh it as before directed, and clear it up with lamp-black and oil, to give it a polite and gloſſy appearance.

6. As to the colour, you muſt be guided by your reaſon and fancy, whether you will have it light or deep; for a ſmall proportion of the lead makes it deep; a greater, light.

Alſo the ſize for laying whites, blues, or any other colour, ought not to be too ſtrong, rather weaker, and juſt ſufficient to bind the colours, and make them ſtick on the work; for if it be too ſtiff, it will be apt to crack and fly off.

And the reaſon of waſhing twice with clear ſize, is to keep the varniſh from ſinking into, or tarniſhing the colours; and in this caſe it ought to be of a ſtrong and full body.

LAPIS LAZULI JAPAN. 1. Take *Iſing-glaſs Size*, or thick *ſeed-lac varniſh*, and mix it with *Spodium*, or white lead; and with this varniſh your work 3 or 4 times over, laying it for a ground-work, letting it dry between each time.

2. Let it ſtand 2 or 3 days to be thoroughly dry, and then *ruſh* it, till it is very ſmooth, ſetting it by 2 or 3 days more after the *Ruſhing*.

3. Then take thick *ſeed-lac varniſh* at pleaſure, mix it with fine pure *blue ſmalt*, with which varniſh over your work 5 or 6 times, letting it dry between each time, then let it ſtand by for 2 days and *ruſh* it again.

4. When it has been ruſh'd ſmooth, varniſh it twice over, once with the beſt *white varniſh*, and ſet it by to dry for 2 days more, then mix pure *Ultramarine*, or fine blue ſmalt, with the

beſt white varniſh, with which varniſh it 6 or 7 times, till it comes to a full body, and a perfect likeneſs, letting it ſtand to dry between each varniſhing.

5. At the laſt time of *varniſhing* with the *blue Varniſh*, run all your work over ſtragglingly in wild, irregular ſtreaks (in reſemblance of nature) with *liquid* or *ſhell Gold*, filling the *blue* as you ſee occaſion, and adding very ſmall ſpecks up and down, and ſuch other various colours, as are uſual to be ſeen upon the ſtone.

6. When this has been done, and the work is grown thoroughly dry, varniſh it 3 or 4 times over with the *beſt white varniſh*, letting it ſtand to dry between each time; afterwards let it ſtand 2 or 3 days, and then poliſh it with *Tripoli*, and clear it with *lamp-black* and *oil*.

7. You are to take notice of this, that by theſe methods you may make and uſe any colour you can fancy, or which reaſon and experience ſhall direct you to; but withall, that all colours that are light, and apt to tarniſh and loſe their beauty or gloſs, with *ſeed-lac varniſh*, muſt be covered and finiſh'd with the *beſt white varniſh*, that of *ſeed lac* being prejudicial.

CHESNUT-*coloured* JAPAN. 1. Take *Indian Red*, or *Brown red oker*, (which you pleaſe) grind them with *Iſing-glaſs*, or parchment ſize, upon a *Porphyry* ſtone, till they are as ſoft and as fine as butter; then mix a little *white Lead*, which grind ſtrongly, and laſtly lamp-black in a due proportion, ſtirring, and mixing them well together.

2. If the mixture is too bright, darken it with lamp-black: if too dark, heighten it with white lead, varying the proportion till you have brought it to the colour you would have it: for what the colour is while it is wet, it will be exactly the ſame when it is varniſhed; tho' drying without varniſh, it would look otherwiſe.

3. Take thick *ſeed-lac varniſh* 6 ounces, of the former prepar'd colour, what quantity you pleaſe; mix them in a gally-pot over a gentle fire for uſe.

Another Cheſnut JAPAN. 1. Take thick *ſeed-lac varniſh*, and mix it with the ſame colours as you did the ſize, lightening it with the white lead, if too dark, and darkening it with lamp-black, if too light, till you have brought it to be of the colour you would have it. This mixture will be much better with the *ſeed-lac* varniſh.

2. The colours being thus mix'd, if you uſe the ſize mixture, put ſome of it in a gally-pot over a gentle fire to melt it, or give it a fit temper not too thick, nor too thin; then, with a hog's hair *bruſh*, waſh therewith your Piece ſmoothly over, and let it dry, which repeat ſo often, till your colour lies full and fair.

3. When it is thoroughly dry, ruſh it ſmooth; but not cloſe to the wood, and ſo let it reſt a day or two: and then waſh it with *ſeed-lac varniſh* 3 or 4 times, letting it ſtand to be thoroughly dry.

4. Or you may begin, or lay your ground-work, with the *thick ſeed-lac varniſh*, going over the work as with the ſize mixture: afterwards, having let it ſtand to dry, and ruſh'd it, you may go over it 3 or 4 times again, with the *ſeed-lac varniſh* alone, letting it dry as before.

5. When you have done this; either with the *ſize-mixture*, or the *varniſh-mixture*, and they are grown thoroughly dry, then varniſh it again up to a body, with *fine white varniſh*, till it is fit to be poliſh'd; which perform with fine *tripoli*, and a rag and water, and then clear it up with *lamp-black* and *oil*.

Olive-coloured JAPAN. Take *iſing-glaſs*, or parchment ſize, (*ſee* SIZE) what quantity you pleaſe; *Engliſh pink*, in fine powder, a ſufficient quantity; grind them together, till they are of the conſiſtence of butter: then mix it with *lamp-black* and white lead in a due proportion, which you may find by making ſeveral trials; adding white lead, if it be too dark, and lamp-black, if it be too light.

If it be too *green*, help it with a little *raw umber* ground very fine, for this will take away the *greenneſs*.

Another Olive-coloured Japan. Take thick *ſeed-lac varniſh*, 6 ounces; *Engliſh* pink in fine powder, mix'd with lamp-black, and white lead in due proportion, a ſufficient quantity. If it be too light, help it with lamp-black; if too dark, with white lead; and if too green, with umber ground fine. This is the beſt of the two, with either of theſe varniſh over your piece, according to the rules preſcrib'd for other colours, poliſhing and cleanſing it as before directed.

Where you are to take notice,

1. That no colours laid in ſize, will endure ſo ſtrong a poliſh as thoſe in varniſh; but are more ſubject to be rubb'd off.

2. That the finiſhing *varniſh* muſt be the *beſt white varniſh*, that the colours may not tarniſh.

MARBLE *and* TORTOISE-SHELL JAPAN. Your wood being prepared in all reſpects, as for *white Japan*, then lay it over with *flake white* or *white lead*; and if you deſign your work to be a *white* with ſome veins, uſe *vine-black* (made of the cuttings of vines, burnt and ground;) mix it with a very weak *iſing-glaſs ſize*, made warm, the ſaid *vine-black* and white lead, making 2 or 3 degrees of it, till you have produc'd the intended colours for the clouds and veins of marble.

2. Then with a large, clean bruſh, wet the work over with water; and before it is dry, dip a camel's-hair pencil in the paleſt thin mixture, and ſo lay the fainteſt large clouds and veins, which being laid on while the work is wet, will lie ſoft and ſweet, like that which is natural.

3. And before it is too dry, gently touch all the leſſer veins, and variety of the marble, with a *ſmaller pencil*, and one degree darker; endeavouring, as much as may be, to imitate nature in all its footſteps.

4. Then, with a ſmall-pointed feather, touch and break all your ſmaller veins with the deepeſt colour, and making them irregular, wild, and confus'd, as they appear in the real ſtone: then ſet it by to dry for a day or two, and waſh it over with *iſing-glaſs ſize* or *parchment ſize*.

5. After it has ſtood for 2 or 3 days to dry, varniſh it over 5 or 6 times with the *beſt white varniſh*, letting it ſtand to be thoroughly dry between each time: then ſet it by again for a week, and afterwards poliſh it and clear it up, according as you are directed in varniſhing other works.

6. If you would have it repreſent either *white* or grey marble, you muſt uſe the *beſt white varniſh*; but if yellowiſh, or of a *parchment colour*, you muſt uſe the *beſt ſeed-lac varniſh*, either alone, or mix'd with the white varniſh, as you pleaſe.

Another marble JAPAN. 1. Take of the *beſt white varniſh*, or of the *univerſal varniſh*, with which mix *white lead*, finely powdered, and lamp-black, or *ivory black*, in what proportion you ſhall think fit, making 3 degrees of it.

2. Go over the whole work with a bruſh pencil, with the firſt and lighteſt degree, clouding and marbling it in imitation of nature, going over it 4 times, letting it dry between every time.

3. Go over the work again with a ſecond darker degree, and a freſh clean pencil, *viz.* ſome of the clouds, and edges of the clouds, as alſo ſome of the greater and leſſer veins, ſhadowing and making them ſomething deeper; repeating this work in different places: in ſome, twice; in ſome, 3 times; and in ſome, 4 times.

4. With the third and darkeſt degree, go over the edges of ſome of the darker veins, and over all the leſſer veins, repeating the work in ſpots and particular places 4 times, as before.

5. After you have done all this; let it ſtand by 2 or 3 days to dry, and ſtrike it over 4 or 5 times or more, either with the *beſt white varniſh*, or with the beſt *ſeed-lac varniſh*, ſetting it by to dry between every time: then let it ſtand to dry for a week, and then *poliſh* it, and clear it as before directed for other japann'd works.

To make TORTOISE-SHELL JAPAN. 1. That which is here endeavoured to be imitated, is *tortoiſe-ſhell* laid upon *ſilver foil*, which gives it life and beauty; now to imitate this well, the wood muſt be cloſe grain'd and ſmooth, and well wrought, as *box*, *pear-tree*, *wallnut-tree*, &c.

2. But if the wood be coarſe-grain'd, as *deal*, *oak*, &c. it muſt be firſt prim'd with *ſize* and *whiting*, letting it dry between each time, and at laſt *ruſh* it ſmooth.

3. Then ſtrike over the breadth of a *leaf of ſilver* with a fit *varniſhing pencil*, and the *thickeſt ſeed-lac varniſh*, then take up the ſilver leaf with a cotton, and lay it on your work while it is moiſt, dabbing it down cloſe to the work, as is directed in *gilding*.

4. Then, in the like manner *varniſh* another place, and lay on another leaf as before, doing this till the whole work is covered over with leaf ſilver, then let it ſtand to be thoroughly dry, and ſweep off all the *looſe ſilver* with a fine hair-bruſh.

5. After this, take *lamp-black*, or rather *Cologn*'s Earth, (which comes neareſt to the colour of the ſhell,) as much as you pleaſe, and grind it with parchment ſize, or gum water, till it becomes very fine and impalpable; and when it has been ground very fine, mix it with more *parchment ſize* and *gum water*, agreeing with what you firſt ground withall.

6. Spot the darkeſt part of your ſhell-work with this mixture after a careleſs, cloudy manner, imitating nature as much as can be, letting a piece of true tortoiſe-ſhell lie by you for your imitation.

7. Grind fine *ſanguis draconis* in *gum* water very ſoft; but ſome grind it dry, till it is very fine, and then mix it with *fine ſeed-lac varniſh*, which is moſt proper and agreeable for this work, and not ſo apt to be poliſh'd off as ſize or gum water.

8. Now whereas there are ſeveral reds, lighter and darker, to be found on the edges of the blacker part, which ſometimes lie in ſtreaks and clouds on the tranſparent part of the ſhell; theſe are to be imitated with one of the two former mixtures of *dragon's blood*.

9. With a ſmall pencil dipp'd in one of thoſe mixtures, daſh the ſaid *red ſtreaks*, &c. fluſhing them in and about the dark places, both thicker and thinner, fainter and lighter, and with leſs colour towards the lighter part; and afterwards ſweeten it by degrees, that it may ſo loſe its ſtrength and redneſs, as to be quite loſt in the ſilver, or more tranſparent parts of the work.

10. When you have done this, give it 6 or 7 waſhes of *fine ſeed-lac varniſh*; and letting it ſtand to dry for a day or two, ruſh it gently and very ſmooth, to render it fit for the next operation.

11. Take fine *ſanguis draconis* and *gamboge*, of each a ſufficient quantity, reduce them to a fine powder, mix theſe with as

much *fine ſeed-lac varniſh* as will varniſh the piece 6 or 7 times over, and ſet it by to dry for 6 or 7 hours, or more.

12. Then give it another, or third *varniſhing* with the laſt mixture, going over it ſo often, till the *ſilver* ſeems to be chang'd to a *gold-like* colour.

13. And laſtly, take care that your varniſh be not too thick and high coloured with the *ſanguis* and *gamboge*; but rather heighten it by degrees, leſt the *ſilver* be too high coloured, before it has had a ſufficient body of varniſh. Let it ſtand to dry 6 or 7 days, then poliſh and clear it up, as before directed.

Another tortoiſe-ſhell JAPAN. 1. Firſt let your work be very well prim'd, as before directed, then *lacker* and ſize it in oil, as is taught in the art of *gilding*.

2. Lay on the *leaf ſilver*, and let it ſtand till it be very dry, and having the following colours ready, finely ground in oil, *viz. red lake*, *cinnabar*, *brown pink*, Cologn's *earth*, alias *burnt umber*; place them diſtinctly on your pallat.

3. Strike over the work with *turpentine varniſh*, and while it is wet, mix lake and *brown pink* thin with *varniſh*, and with it lay all your fainteſt clouds or ſpots, which ſoften ſweetly whilſt the varniſh is moiſt.

4. Let it ſtand 5 or 6 hours, and if the colours are dry, with a large ſoft pencil, paſs it lightly over again; and again moiſtening it, put in more clouds, and darken them more and more, with *umber* and *Cologne* earth, before it is dry; always imitating the life, and ſweetening your work, by blending and inſenſibly mixing the colours after they are laid, ſo that it cannot be perceiv'd where they begin or end.

5. *If the clouds are not dark enough*, repeat the clouding and varniſhing once more, as you ſhall ſee occaſion; when the work is well dry'd, glaze it over two or three times with brown pink, with a ſmall tincture of *verdigreaſe* in it: or you may varniſh it with a *fine ſeed-lac varniſh*, and then finiſh it, as before.

Another tortoiſe-ſhell JAPAN. Firſt lay a white ground, as before taught: then, with proper colours, as *vermilion*, *auripigment*, &c. duly mix'd with *common* or *turpentine varniſh*, ſtreak and cloud, or ſhadow the white ground, with any irregular fancy at pleaſure, imitating tortoiſe-ſhell as much as you can.

2. Let it ſtand to be thorough dry, and then ſtrike it here and there with the reddiſh yellow varniſh, mix'd with a little cinnabar or *Indian* lake, clouding the work up and down as nature requires, and touching it alſo up with *varniſh*, mix'd with *lamp* or *ivory-black*.

3. Having done this, varniſh it 5 or 6 times over with the *fineſt white varniſh*, or the *univerſal varniſh*, or with the *fine ſeed-lac varniſh*, letting it ſtand to dry between every time.

Another tortoiſe-ſhell JAPAN. 1. Lay a white ground as before, and ſmear it over with *vermilion*, or ſome ſuch like, over which lay *leaves* of *gold* or *ſilver*, as before taught, with *gum ammoniacum*, *lacca*, *varniſh*, *common varniſh*, *ſize* or *glair*.

2. Having done this, and it being thoroughly dry, ſhadow, cloud and ſtain it, according to ſome of the former directions, and in imitation of nature; ſtriking it over here and there with *yellow varniſh*, or *reddiſh yellow varniſh*, and *red varniſh* mix'd with *yellow varniſh* in perfect imitation of the ſhell.

3. And *laſtly*, then ſtrike it 6 or 8 times over, either with the beſt *white varniſh*, or with *the fine ſeed-lac varniſh*, letting it ſtand to dry between every time; then let it ſtand to dry for a week, then *poliſh* and clear it as before.

JAPANNING *with gold ſize.* 1. When your work is wrought, and you would decypher on it, draw the *gold ſize* (*See* GOLD SIZE) all over that part, and that part only, which you intend to gild or adorn with *gold*, omitting thoſe places where you intend to lay your metals and other colours, as *ſilver*, *copper*, *braſs*, &c.

2. *The ſize being thus wrought for the gold*, let it remain 'till it is ſo dry, that when you put your finger upon it, it muſt be glutinous and clammy, and ſtick a little, but not ſo moiſt, that the leaſt particle of it ſhould come off with your fingers; but that it may be much like to thick glue, when it is half dry.

3. When it is in this temper, it is the very nick of time, when the *gold* is to be apply'd; then take a piece of ſoft waſh-leather, or the like, and wrap about your fore-finger; dip it in your *gold duſt*, and rub it where your *gold ſize* is laid, for it will ſtick on the ſize, and no where elſe.

4. If any *gold duſt* lies ſcattered about your work, bruſh it all away into your paper, in which your *gold* is, with a fine varniſhing bruſh, which has not been us'd.

5. Then with your pencil draw that part with *gold ſize* alſo, which is deſign'd for your *copper*; and let it dry, as has been directed for the former, and then cover it with *copper duſt*, after the ſame manner as you did with the *gold duſt*.

6. Having done this, lay your *ſilver ſize*, and when it is dry as before, lay on your *ſilver duſt*, as you did the two former.

7. But this is always to be obſerv'd, that the metalline colours are to be laid, ſucceſſively one after another, letting each be covered, and thoroughly dry, before you enter upon a diſtinct colour.

8. After all theſe, the other colours (which are not metalline) are to be laid on, with *gum-water*, reſerving the rocks, *&c.* for the laſt part of the work.

9. If you have mix'd more *gold ſize* than you have occaſion for at one time, or if you are hindred from finiſhing it in one day, (you will obſerve that your ſize, in 5 or 6 hours time, will have a skin upon it:) in order to this, put the pencils into a gallipot of water, and pour fair water over your pot of gold ſize; and if your ſize ſhould grow too thick, you may thin it with *Venice Turpentine*; but you are to take notice, that doing this oftener than once will ſpoil the ſize.

10. Let your ſize be of a due conſiſtence, neither too thick nor too thin, that it may run ſmooth and clear, and that your ſtrokes may be fine and even, ſo that you may be able to draw the moſt fine hair ſtrokes.

11. If you would imitate *Japan*-work exactly, avoid filling and thronging your black with draughts. In the true ***Indian*** work the ground is never crouded up with many figures, houſes, or trees; but a great ſpace is allow'd to a little work, for the *black* adds luſtre to the *gold*; and the *gold* adds an excellency to the *black*.

12. In theſe works you may uſe ſome variety of metals, but in a very ſlender proportion to that of *gold*, which is the general ornament and characteriſtick of the genuine or true *Japan* work.

13. Be very exact in tracing or drawing out your deſign in *vermilion* or *gold*, to do it with an even hand: then your *gold ſize* being ready prepar'd, make with a ſmall pencil the outward lines; the boundaries of the rocks, and thoſe things that ſeem to lie beyond the buildings.

14. Begin thoſe parts of the work that are moſt diſtant from you; becauſe then you will not be liable to rub or deface any thing while it is wet.

15. When you have done the fartheſt parts, work juſt according to your pattern (if you have any) and draw the *gold ſize* on the places, anſwering to the black lines of your print or pattern, and no where elſe, leaving the white for the ***black Japan***, or ground of the work.

16. *And in all reſpects uſe your ſize, as if you were to copy the print or pattern on white paper with ink or black lead*; only you muſt take care, that while you are working on one part, you don't ſuffer that which is already done with ſize, to grow ſo dry, that it will not hold the metals; and for that reaſon you muſt often try in what caſe thoſe parts of your work that are already ſiz'd are in.

17. And therefore you muſt ſometimes be drawing, ſometimes gilding; and then go to drawing again, and then to gilding; continuing this alternately 'till your whole work is quite finiſh'd.

18. If you find it troubleſome to draw the *white*, and overpaſs the *black*, or on the contrary to draw the *black* and omit the *white*; on the tops of houſes, foldage of figures, faces, or the like; then for your eaſe overlay all thoſe parts of buildings, foldages, faces, *&c.* with *gold ſize*, and lay the metals on them; and when they are well dried, waſh over thoſe places only which you deſign to ſet off with *black*, with your *ſecuring varniſh.*

19. Tho' in ſome *Japan-work*, *ſilver* is ſometimes made uſe of; yet it is but very ſeldom, except in ſome rais'd works, becauſe the beſt and brighteſt *ſilver* is too ſplendid a metal for *black Japan*; and therefore we chuſe inſtead of that a kind of dull or dirty *ſilver*, which is *tin-powder.*

20. And *laſtly*, you may ſet off your plain metals, when rubbed on *gold ſize*, either with metals mix'd with *gum-water* or *gold ſize*, *viz.* when the plain metals are laid and thoroughly dry, hatch or work in the ſize for ſetting off, as you would do with metals mixed with *gum-water*, and it is not to be doubted you would find the *gold* to be the beſt.

JAPANNING *with* GOLD *and Colours.* 1. Draw or trace out your deſign, and fill moſt part of your ſmall works with *gold*, paſſing by, nevertheleſs, ſome few of them are to be reſerv'd for bright *copper*, *green*, *gold*, &c. to be ſo added to the pieces, that they may grace and enliven the work.

It is uſual with *Japanners* to fill frequently with dead metals, and to bind them in with *gold.*

2. Suppoſe you have great flowers, you may fill the ſeeded part thereof with *ſilver*, the leaves with *vermilion*, and in ſetting off work it with *black diamond* wiſe; and the little ſpots of *black* which lie in the *white*, work with bright *red copper*, then the part which is fill'd with *red*, bind in with *ſilver*, and vein it with the ſame.

3. The ſeed of another large flower may be fill'd with bright *copper*, the leaves with *ſilver*; and in ſetting off border the ſeed with *black*, the inſide with *ſilver*, and compaſs in the leaves with *gold*, hatching them with *black.*

4. If any large flower is partly hid with a large leaf or leaves of the plant, let the ſeed of this be green *gold*; ſome parts bright *gold*, and if any ſpots are in thoſe parts, let them be done with pure *Cinnabar*; the flower with *orange-tawney*, and ſet off with *ſilver*; and the leaves of the plant with a yellowiſh green.

5. If there be a third flower, that may be done with green *gold*, the ſeed of it with bright *gold*, ſquar'd with *black*; other flowers may be laid with *ſilver*, the ſeeds with bright *copper*, and hatch'd and ſquar'd with *black*; other flowers with *Cinnabar*, the ſeeds with tranſparent *green*, encloſ'd with *vermilion*, and the leaves hatch'd in with *ſilver.*

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T. [illegible]

6. Another large flower may have its ſeed *red*; checquer'd with Silver, the leaves cover'd with blue, hatch'd and ſurrounded with *Gold*, leſſer flowers red, ſeeded with blue, and ſet off with ſilver.

7. Another large flower may be laid with tranſparent *blue*, bounded and wrought with *gold*; the leaves cover'd with *ſilver*, hatch'd with fine *cinnabar*. If there be another flower like the former, lay it with blue, ſeed it with dirty *copper*, ſet off and inclos'd with *ſilver*, its leaves with bright red *copper*, hatch'd with *black*.

8. Lay the ſeed of other flowers in tranſparent red, ſet them off with *ſilver*, border with *black*; make the leaves *ſilver*, and hatch with *black*; or make the ſeed bright *copper*, compaſſed and ſet off with *black*; the leaves red copper, which may be hatch'd and inclos'd with *white*.

9. Though in what has been ſaid, *filling* and *ſetting off* has been ſpoken of together, for the more eaſy apprehending of the matter; yet the plain colours muſt always be laid, before you think of ſetting them off; becauſe you are more ready to ſet off with one colour before you undertake another, and your fancy is more ready to adorn and burniſh, or fill every ſingle flower and leaf.

10. But when you have filled the flowers, you are next to conſider what is to be the covering of the large leaves; let them be adorn'd with metalline colours, generally, ſuch as *green* ſullied *gold*, pale dull copper; but here and there intermixing tranſparent *blue* and *green*: bound and vein them with ſuch colours as give the greateſt life, ſuch as may be cheerful and delightful.

11. Sometimes you may double the borders of the leaves with the ground black of your piece left between, and make the veins, finiſhing lines, and the ſtroaks you ſet off with, fine, clean, even, and ſmooth.

The way of JAPANNING *wood or paper.* The people of *Japan* have a method of making plates, bowls, and other veſſels of brown *paper*, and ſometimes of fine *ſaw-duſt*.

Theſe veſſels are very light and ſtrong, after they have been varniſhed.

The method of making them is as follows:

Boil a good quantity of ſlips or pieces of *brown-paper* in common water; maſhing them with a ſtick, while it is boiling, till it is almoſt become a paſte; then take it out of the water, and pound it well in a mortar, till it is come to a Pumice, like rags pounded in the trough of a paper-mill.

Then take gum-arabick, and make very ſtrong gum-water with common water, a quantity ſufficient to cover the paper paſte an inch thick: put theſe together into a large glaz'd pipkin and let them boil, ſtirring them very well together, 'till you think the paper paſte is impregnated with the gum; then having a mould ready to give the paſte the form or ſhape you deſign it, put it into it.

The mould is made as follows;

As for example, ſuppoſe you deſign to make a thing in the form of a pewter or earthen plate, you muſt procure a hard piece of wood to be turn'd by a Turner, on one ſide of ſuch a form, (*i. e.* like the back of a plate) and a hole or two made in the middle quite through the wood.

And beſides this, another hard piece of wood muſt be turned, much of the ſame figure, about [illegible] eighth part of an inch leſs than the former; and, if you pleaſe, you may have ſome little ornament carved or engraven on the wood. Oil theſe Moulds very well on the ſides that are turn'd, continuing to oil them, 'till they are well ſoaked with oil, then they will be fit for uſe.

When you are about to make a plate of the paper-paſte, take that mould that has the hole in it, and having oil'd it again, ſet it even upon a ſtrong table, and ſpread over it ſome of your paſte, as equally as poſſible, ſo as to be every where a quarter of an inch thick; then oil the other upper mould very well, and ſet it as exactly as may be on your paſte, and preſs it hard down; then ſet a great weight upon it, and let it ſtand for 24 hours.

N. B. *The hole at the bottom is for the water to paſs through, that is preſs'd or ſqueez'd out of the paſte; and the oiling of the moulds is to prevent the gummed paſte from ſticking to the wood.*

When the paſte is dry, it will be as hard as a board, and be fit to lay a ground upon, made with ſtrong *ſize* and *lamp-black*; then let it ſtand to dry leiſurely, and when it is thoroughly dry, then mix *ivory black* finely ground with the following *varniſh*.

To make the ſtrong JAPAN *varniſh.* Take an ounce of *colophony*, and having melted it in a glaz'd pipkin, and having ready 3 ounces of *amber*, reduc'd to a fine powder, ſprinkle by little and little into it, adding now and then ſome *ſpirit of turpentine*; when this is melted, ſprinkle in 3 ounces of *Sarcocolla* finely powdered, ſtirring it all the while, and putting in frequently more *ſpirit of turpentine*, 'till all is melted; then pour it through a coarſe hair-bag, placed between 2 hot boards, and preſs it gently 'till the clear is receiv'd into a warm glaz'd veſſel. Mix ground *ivory black* with this *varniſh*, and having firſt warm'd your paper plate, paint it in a warm room before the fire, as equally as you can, and ſet it into a gentle oven, and the next day put it into a hotter oven, and on the third day into one very hot, and let it ſtand in it 'till the oven is quite cold, and then it will be fit for any uſe, either for containing liquors cold or hot, and will never change; nor can theſe ſort of veſſels be broke without great difficulty.

It is highly probable, that if the moulds were caſt of any hard metal, they might do better than if turn'd in wood.

The method of making them of the colour of gold. Having prepared plates, bowls, or any other veſſels, according to the method before directed, or according to this that follows;

Take fine ſaw-duſt, and having dry'd it well, pour on it ſome *turpentine*, mix'd with an equal quantity of *roſin*, and half as much *bees-wax:* mix them well, and put them to your dry *ſaw-duſt*, ſtirring all together, 'till the mixture becomes as thick as a paſte; then take it off the fire, and having warmed the moulds, ſpread ſome of your mixture on that which has a hole in the middle, as equally as poſſibly can be, and preſs down the upper mould upon it; then ſet it by, let it ſtand 'till it is cold, and the veſſel will be fit for painting.

You may, when the *turpentine* is melted, put in ſome *ſarcocolla* finely powdered, to the quantity of half the *turpentine*, ſtirring it well, and this will harden it. This compoſition ought to be made in the open air; becauſe being apt to take fire, it will endanger the houſe.

But which-ever of the mixtures you make uſe of, if you would have them look like gold, do them over with ſize; and when that begins to ſtick a little to the finger, lay on leaf-gold, either pure or the *German* ſort; do this as is directed for GILDING, *&c.* which ſee.

But the *German* gold indeed is apt to turn green, as moſt of the preparations of braſs will do; ſuch as thoſe of *Bath-metal*, and others of the like ſort, which look like gold when they are freſh poliſh'd, or clean'd every day.

But as they being expos'd to the air, will change or alter to an ugly colour, gold is rather to be choſen; and is durable, never changing, and of a much finer colour than any of the former for a continuance.

And altho' the leaf-gold is tender, and may be ſubject to rub off; yet the varniſh, with which it is covered, will keep it bright and entire.

After the gold has been laid on, and the gold ſize is dry, and the looſe flying pieces bruſh'd off, then lay on the following varniſh to brighten the gold, and preſerve it from rubbing.

Varniſh for gold and ſuch leaf of metals as imitates gold. Melt ſome *colophony*, and then put in 2 ounces of *amber* well-pulveriz'd, with ſome *turpentine*, as the *amber* thickens, ſtirring it well; then add an ounce of *gum-elemi* well-powdered, and ſome more *ſpirit of turpentine*; ſtill keeping the liquor ſtirring, 'till it is all well mix'd: but take care to uſe as little *ſpirit of turpentine* as you can, becauſe the thicker the varniſh is, the harder will it be.

Let this operation be perform'd over a ſand-heat in an open glaſs, and ſtrain it as directed for the former varniſh.

Uſe this varniſh alone, firſt warming your veſſels, made of the paper paſte, and lay it on with a painting-bruſh before the fire; and afterwards harden it by degrees at 3 ſeveral times in ovens; the firſt being a ſlow heat, the next a warmer oven, and the third a very hot one: and theſe veſſels will look like poliſh'd gold.

You muſt obſerve, that thoſe veſſels, that are made with ſaw-duſt and the gums, you may for them uſe a varniſh, made of the ſame ingredients as above, excepting only the *gum elemi*; and this will dry in the ſun, or in a very gentle warmth.

To make theſe paper, &c. *veſſels of a red colour with gilded figures on them.* The veſſels being prepared as before directed, with *brown-paper paſte*, and after they are dried, *&c.* as directed for the firſt, mix ſome *vermilion* with the varniſh firſt directed, and uſe it warm; then ſtove it, or harden it by degrees in an oven, and it will be extremely bright; or elſe lay on the firſt ground with *ſize* and *vermilion*, and with *gum-arabick water* ſtick on in proper places ſome figures, cut out of prints, as little ſprigs of flowers, or ſuch like; and when they are dry, do them over with gold ſize, and let them remain 'till it is a little ſticking to the touch. Then lay on the gold, and let that be well cloſ'd to the gold ſize, and dried; then if you have a mind to ſhade any part of the flower, trace over the ſhady parts on the leaf gold with a fine camel's-hair pencil, and ſome ox-gall, and then paint upon that with deep *Dutch* pink; and when that is dry, uſe the varniſh in a warm place, (*i. e.* that varniſh directed for the covering of gold) and when you have done, ſet it to harden by degrees in an oven. This varniſh will ſecure the leaf gold, or *German* metal from changing, by keeping the air from it.

The method of ſilvering theſe JAPAN *veſſels.* After the veſſels have been made, and are thoroughly dried, do them over with ſize, and with ground chalk or whiting; let them ſtand by 'till they are very dry, and then paint them over again with the brighteſt gold ſize you can get, (for there is a great deal of difference in the colour of it; ſome of it is almoſt *white*, and other *yellow*; the latter is proper for gold, and the former for ſilver.) When this ſize is almoſt dry, lay on the leaf ſilver, and cloſe it well to the ſize, bruſhing off the looſe parts, when 'tis dry, with ſome cotton.

When you lay on your leaf-ſilver or leaf-gold, keep it free from the air; for the leaſt motion of the air will rumple the leaves, and they will not lie ſmooth, then uſe the following varniſh to cover the ſilver.

To make the varniſh to cover the ſilver. Melt ſome fine *turpentine* in a well-glaz'd pipkin, then take an ounce and half of *white amber* well-pulveriz'd, put it by degrees into the *turpentine*, ſtirring it well, 'till the *amber* is all diſſolv'd, then put to it half an ounce of *ſarcocolla* powdered, and half an ounce of *gum elemi* well levigated; pouring in at times more of the *turpentine* ſpirit, 'till all is diſſolved. Let it be done over a gentle fire, and keep ſtirring the mixture continually, while it is on the fire.

This varniſh will be as white and ſtrong as the former, and muſt be us'd warm, and is as ſtrong as that which is laid upon gold; and is to be afterwards hardened by degrees in an oven, as the gold varniſh, and the veſſel will look like poliſhed ſilver.

Directions in colouring draughts or prints of birds, flowers, &c. *in japanning theſe veſſels.* If the prints or drawings of flowers be in black and white, if the center of the flower is riſing, you muſt touch the edges of the lights with a thin tincture of *gamboge*, and lay on ſome *Dutch pink* or gall-ſtone, over the ſhades, ſo as to run into the lights a very little.

This is to be done becauſe the thrums in the middle of flowers are generally yellow; but if of any other colour, as ſometimes blue, *&c.* ſometimes lighter, and ſometimes darker; then touch the verges of the lights with a little *ultramarine blue*, and over the ſhades either ſome *ſanders blue*, to run a little into the *ultramarine*, or elſe ſhade with *indigo*; and ſome of the white of the print being left void of colour, will then give life and ſpirit to the colours ſo diſpos'd.

All flowers ſhould be tenderly touch'd in the light, juſt to give a little glare into the light parts of the colour you would give to the flower-leaves; and if you paint by a natural flower, you will preſently ſee, that on the ſhady ſide, you muſt lay on the moſt ſhady part, ſuch a colour as will force the reſt to appear forward: but do not daub over the ſhades with too heavy a colour; let it be ſuch as may be tranſparent, if poſſible, and ſcumble it into the light colour, that was laid on before. On this occaſion the pencil muſt be us'd but lightly, with a very little gum-water in it, and it muſt be us'd before the colours are quite dry.

In painting the leaves of plants and herbs, regard muſt be had to the colours of the greens; that ſometimes being the chief diſtinguiſhing character.

Of greens, *verdigreaſe* is the lighteſt; therefore that colour ſhould be touch'd into the light parts of the leaf, from the place where the lighter parts of the ſhades end: and then on the ſhady parts, lay on ſome ſap-green, ſo as to unite with the *verdigreaſe* green; and if the natural leaf ſhould be of a darkiſh colour, touch the lighter ſides of the leaves with a little *verdigreaſe* green, and *Dutch* yellow pink, mixt together, or with a tincture of *French* berries, but ſo as to let the *verdigreaſe* ſhine more than the *pink*.

The leaving the lights in colouring a print, has two advantages, *viz.*

If the lights be left on this occaſion, the whiteneſs of the paper ſerves inſtead of the uſe of *white* paint, which is an heavy colour, and would rather confound thoſe that have been preſcrib'd to be laid on, than do them any ſervice; but the colours before directed, where there is no white laid on, will ſhine agreeably into the white of the paper.

I am the more particular in this, becauſe ſome perſons will lay a blue flower, all over with one colour, tho' it be thick enough to hide both the lights and the ſhades; and then it will look like a penny picture, where there is nothing but a jumble of *reds*, *blues*, and *greens*.

In ſuch pieces of work, be ſure to ſcumble the lights into the ſhades of every colour, and leave the middle of the lights open on the papers; for as the paper is white of itſelf, it makes a light.

Of laying SPECKLES *or* STREWINGS *on* JAPAN *work.*

1. To *do this either on the out or inſides of boxes, drawers*, &c. mix your *ſpeckles* with *ordinary lac-varniſh*, ſo much as may make it fit to work, but not ſo thick as for colour; and mix them well with a proper bruſh.

2. Warm the work to be done gently by the fire, and with a fit pencil waſh it over with the former mixture; and when it is dry, repeat it again, and ſo often 'till your *ſpeckles* lie as thick and even as you deſire.

3. When it is thoroughly dry, go over and beautify the work 3 or 4 times with *ſeed-lac varniſh*, mixt with *turpentine*, and ſo let it dry, and the work is finiſhed, except you have a mind to poliſh it.

4. But if you poliſh it, then you muſt waſh it 8 or 10 times over with the beſt *ſeed-lac varniſh*, letting it ſtand to dry every time, and afterwards poliſh it as before directed.

5. All ſorts of colour'd *ſpeckles* may be thus uſed, except thoſe of ſilver, the laying on of which, requires the *beſt* and *fineſt* of the *ſeed-lac varniſh*, or the beſt *white varniſh*, which

muſt make it fit for poliſhing; but if you have not a mind to poliſh it, fewer waſhes of the varniſh will be ſufficient.

To lay ſpeckles on the drawing part of Japan work as on flowers, herbs, trees, fowls, beaſts, rocks, garments, &c.

To do this, make a tiffany ſieve of a wooden pill-box, by ſtriking out bottom and top, *&c.* then with your varniſh and pencil ſtrike over the places you would ſpeckle.

1. When you have done this, before it is dry, put ſome of your *ſpeckles* into your ſieve, and gently ſhake the ſieve over the places you deſign, 'till they are all ſpeckled according as you would have them.

2. *But for rocks*, with a dry new pencil ſweep all the ſtraggling *ſpeckles*, which lie beyond the wet parts, into and upon the ſides and top of the rock; which will render the work not only thicker of *ſpeckles*, but alſo more beautiful, and give it a kind of ſhadow and reflexion.

3. As ſoon as one part is compleated, you muſt proceed to another, but not before the other is perfectly dry; *rock-works* alſo ought to be of different colours, and as many ſhapes, 'till the whole deſign is finiſh'd.

4. Your work being cold, it will certainly for the preſent look dull and cloudy; and as if very ill done, or with ill materials, without either life or beauty: but be not diſcourag'd if ſo, for it will in a little time obtain its luſtre and glory, and by *ſecuring varniſh* be made firm and durable.

Of JAPANNING *metals with gum-water.* You are to take notice, that it is only to be done with theſe colours, which have a body; not with tranſparent colours.

1. Take *gum-water*, put it into a muſcle-ſhell, with which mix ſo much of your metal or colour, as may make it neither too thick nor too thin, but that it may run fine and ſmooth from the pencil.

2. Mix no more at a time than is ſufficient for your preſent uſe; for they will ſpoil by being kept mixt.

3. And for your colours, your ſhells muſt be often ſhifted and changed; for otherwiſe the colours and gums will become knobby, thick, and out of order.

4. Having prepar'd and well-mixt your metals and colours, lay on your deſign with a hog's-bruſh pencil, with a ſmooth and even hand, drawing the pencil on the ſide of the ſhell, that it may not be overcharg'd with the colour or metal, when you are about to draw ſmall lines or ſtrokes.

5. But where you draw broad things, as leaves or other large works, then you may charge your pencil-full, but yet not ſo full as to drop.

6. *Now here it is to be noted*;

1. That the practice of *gum-water* is uſeleſs and unneceſſary in the uſe of gold ſize.

2. That your gum-work being thoroughly dry'd, you are to run it over 8 or 10 times with your fine *ſeed-lac varniſh*, or *beſt white varniſh*; and afterwards poliſh it and clear it.

7. The *black* or *ground* on which your draught is to be made, when clear'd up, will be ſo gloſſy, as if it were greaſy, ſo that the metal or colour will not eaſily ſtick on; and for this reaſon you ought to rub it with a *Tripoli* cloth, and ſuffer it to dry; and ſo will the draught of the pencil be ſmooth, and ſtick on as you would have it.

8. If *your work with gum-water ſhould not ſucceed to your ſatisfaction*, as not being even and regular, or the lines at a true diſtance, (as it may ſometimes happen to young beginners) you may with the *Tripoli* cloth wipe out all, or any part of that, which you think unhandſome, or unfit to ſtand, and then immediately make a new draught.

9. And ſo by this method you may mend, alter, add, take from, blot out, change, and variouſly contribute to your deſign, 'till the whole piece is as perfect as you would have it.

To JAPAN BRASS, *ſuch as is us'd to gild braſs buttons, or make them look like gold.*

This may be us'd upon leaf-gold, or upon what is called the *German* leaf-gold, or upon *braſs*, or upon *Bath* metal, which are deſign'd to imitate gold.

Take a pint of *ſpirit of wine*, and put it into a retort-glaſs, then add a quarter of an ounce of *gamboge*, half an ounce of *lake*, and half an ounce of *gum-maſtick*; ſet this in a ſand-heat for 6 days, or near the fire, or put the body of the retort frequently in warm water, ſhaking it twice or thrice a day; then ſet it over a pan of warm ſmall-coal duſt; and having firſt well-clean'd the metal, do it over thinly with this varniſh, and it will appear of the colour of gold; it may be dried in a declining oven, and it will not rub off.

N. B. *This is a good varniſh to mix with any colours that incline to red, and the white varniſh to mix with thoſe colours that are pale, or of any other ſort.*

JARGONS *of* Avernia, *to make thoſe red that are of a gridelin colour.*

Theſe JARGONS are little ſtones commonly found in that country, and ſeveral other places in *France*.

They are red and ſhining like the *Jacinth*, which has gain'd them the name of falſe *Jacinths*, becauſe they much imitate that precious ſtone.

But there are many of theſe ſmall ſtones found, which are not of a *red* colour, but a kind of a *gridelin*.

Toms ſculp.

To theſe you may give a red tincture, with as much eaſe as you can take it away from the other, to convert them into diamonds.

To give a *red* colour to *Jargons*, that are of a *gridelin*, you muſt take equal parts of purified *ſal-armoniac*, and of *tartar* calcin'd to whiteneſs, as is ſhewn elſewhere; mix theſe matters well in fine powder; then ſtratify the *Jargons* in a crucible, layer upon layer, beginning and ending with the powders.

Then put the crucible in a good coal-fire, but not hot enough for the ſtones to melt; but only to grow red-hot, that they may be the better penetrated by the tincture the materials will give it. Then let it cool; and by this method they will take as fine and ſhining a red tincture, as the true and fineſt natural *Jargons* of this colour have.

The way of extracting a tincture of JARGON de Auvergne, *and to make very fair and hard diamonds of them.*

Theſe ſtones may be made white and hard like true *diamonds*, by taking away their tincture, which is no deſpicable ſecret; there have been *roſe-diamonds* made of them ſo fine, that the beſt goldſmiths have been miſtaken in them, and thought them true diamonds.

Theſe *Jargons* muſt be boil'd in a *balneum* of mutton-ſuet, wherein they will loſe all their red colour, and become white.

Then take equal parts of *emery* of *Spain*, *rock-cryſtal*, *pumice-ſtone*, and ſulphureous *Tripoli*, the whole reduc'd into fine powder, and ſearced through a fine ſieve; make a paſte of it with *aqua-vitæ*, and with this cement your *Jargons* in a large crucible, layer upon layer, then cover with another, and lute them well, then ſet it in a furnace over a gentle fire for half an hour; then augment your fire 'till it be hot enough for fuſion, in which leave the whole for 14 hours: then let the fire go out, and the crucible cool of itſelf, wherein, after you have broke it, you will find your ſtones of a very fine diamond colour, hard, ſhining, and ſparkling, like the true ones, which you may have poliſh'd and work'd up.

This ſulphureous *Tripoli*, which enters into the compoſition of this paſte, being not commonly known, I ſhall ſhew the way of making it, as follows.

Take equal parts of *Tripoli*, *crude antimony*, and *common ſulphur*, and grind them to fine powder on a porphyry-ſtone, and make them into a paſte with *vinegar*, which when it is dry, will eaſily crumble.

This is the ſulphureous *Tripoli*, made uſe of for this purpoſe.

Some perſons in taking away the colour from *Jargons*, and giving them the hardneſs and whiteneſs of *diamonds*, have made uſe of *barley-meal*, making a paſte with it, and diſtill'd vinegar, impregnated with lead, with which they ſtratify the ſtones or *Jargons* in a crucible, covered with another, and well luted; which they afterwards put in a gradual, round, or wheel fire for 6 hours. But this way they could not give them the true *diamond* colour.

Some alſo ſtratify their ſtones with pounded coal, which they put in a crucible, covered and luted, which they ſet on the fire for 6 hours, ſo that the crucible be always red-hot.

But this way is not to be approv'd, becauſe the coals may dry the humour of the ſtone, and calcine it.

To turn JARGONS *into* DIAMONDS. Here I give another way of making precious ſtones much harder, there being no *Saturn* employ'd therein, which always makes ſtones ſofter and heavier, what preparation ſoever you uſe of it.

Here I ſhall direct to the uſe of only natural *cryſtal*, and ſome materials added to it, to give it the colours of all ſorts of precious ſtones.

Alſo in the compoſition of the materials of theſe Gems, fine and pure ſalt of *tartar* prepar'd, which is to open the cryſtal, and make it the better imbibe the colour of the tinctures given to it, which will make the ſtones appear more fine and ſhining.

To prepare the *cryſtal*, you muſt firſt calcine it, that is, by heating it red-hot in a crucible, and quenching it often in cold water, changing the water each time.

But inſtead of grinding to an impalpable powder on marble, you muſt pound it in a braſs mortar, with a peſtle of the ſame, and not uſe either iron or marble, and then the cryſtal is to be ſearced through a fine ſieve: and this is the baſis of gems in general.

JASPER is a precious ſtone, that does not differ much from the Agate, excepting that it is ſofter, and does not take ſo good a poliſh.

In ſome *Jaſpers* nature has amus'd herſelf, in repreſenting rivers, trees, animals, landskips, *&c.* as if they were painted.

The *florid Jaſper*, found in the *Pyreneans*, is uſually ſtain'd with various colours; tho' there are ſome which have but one colour, as *red* or *green*; but theſe are the leaſt valuable.

The moſt beautiful is that bordering on the colour of *laque* or *purple*; next to that, the *carnation*: but what is now uſually taken, is *green* ſpotted with *red*.

JASSEMIN, [in *miniature*,] cover it with a lay of *white*; ſhaded with *black* and *white*. For the outſide of the leaves add a little *bytre*, giving the half of each on that ſide a faint reddiſh caſt of *carmine*.

J.B. ſignifies *James Binchius*.

J. B. *and a bird*, is another different mark of a different Author in a *David*, who ſets his foot on *Goliah*'s head, after *Albert Durer*'s manner.

J. BONASO F. 1544.
J. B. F.
JULIO B. } ſtands for *Julio Bonaſoni fecit.*

J. B. M. ſignifies *John Baptiſta of Mantua*, who was *ſcholar* to *Julio Romano*; he engrav'd the burning of *Troy*, and other pieces of his own invention.

J. B. F. ſtands for *James Belli*, a *Frenchman*, *fecit*, or *Belli fecit.*

J. C. *inv.* ſignifies *Julius Cæſar Procaccinus inventor.*

ICONOGRAPHY. Deſcription of Images, or of antient ſtatues of marbles and copper, of buſts and ſemi-buſts, of paintings in freſco, moſaic works, and antient peices of miniature.

ICTHYOCOLLA, *iſing-glaſs*: *Schroder* tells us, it is made from a fiſh, which is common in the *Danube*; the fiſh having no bones but about the head.

After it is cut in ſmall pieces, they boil it in water to a thick jelly, which is ſpread abroad and dry'd, then roll'd up, and brought to us in the form we ſee it in the ſhops.

IDEA, is repreſented [in *Painting*, &c.] by a beautiful lady, rapp'd into the air, covering her nakedneſs only with a fine white veil; a flame on her head, her forehead ſurrounded with a circle of gold, ſet with Jewels; ſhe has the image of nature in her arms, to which ſhe gives ſuck, and points at a very fine country underneath.

She is in the air, becauſe immaterial, and conſequently immutable; naked, exempt from corporeal paſſions; the white veil doubles the purity of Ideas, differing from corporeal things; the golden circle denotes the perfection of ideas, being the model of all things; the country pointed at, the inferior ſenſible world.

IDOLATRY, is repreſented [in *Painting*, &c.] by a woman blind, upon her knees offering incenſe to the ſtatue of a brazen bull.

Blind, becauſe ſhe does not rightly perceive whom ſhe ought principally to adore, and worſhip; it needs no farther explanation, for all thoſe acts of adoration ſhe blindly renders to creatures, whereas ſhe ought to adore her creator only.

JEALOUSY. This paſſion wrinkles the forehead, the eyebrows are ſunk down and knit, and the eye-ball is half hid under the eye-brows, which turn towards the object; it ſhould appear full of fire, as well as the white of the eye, and the eye-lid; the noſtrils are pale, more open, and more mark'd than ordinary, and drawn backwards, ſo as to make wrinkles in the cheeks. The mouth is ſo ſhut, as to ſhew that the teeth are cloſed; the corners of the mouth are drawn back, and very much ſunk down; the muſcles of the jaws appear ſunk; the colour of the face is partly enflam'd, and partly yellowiſh; the lips pale or livid. And thus it muſt be deſcrib'd in drawing, *&c.*

JEAT, ſometimes call'd *black amber*, is a mineral, or a foſſile ſtone, extremely black, formed of a lapidific, or bituminous juice

uice in the earth, in the manner of coal: it works like amber, and has moſt of its qualities.

It abounds in *Dauphiné*; but the beſt in the world, is ſaid to be produc'd in ſome of the northern parts of *England*.

There is alſo a factitious jeat made of glaſs, in imitation of the mineral jeat.

This is drawn out into long hollow ſtrings, which are cut, and form'd at pleaſure. It is much us'd in embroideries, and in the trimmings of mourning, and may be made of any colour, tho' they are uſually black and white.

J. G. *Van Uliet*, is the ſame as *James Grandehomme*.

IGNOBLENESS, is repreſented [in *Painting*, &c.] by a woman in a ſhort garment, becauſe it was permitted to none but noble women, to wear long robes. Her hair uncombed, denotes low plebeian thoughts, that never riſe to any thing conſiderable; her aſſes ears, that ſhe is indocile; an owl on her head, which differs from the ordinary birds, and their ſpecies, in not being known; as the plebeian has no pedigree: her ſweeping with a broom ſhews, that the vulgar are employ'd in ſervile things, not capable of divine, moral, or natural ones.

J. H. ſtands for *Jerom Hopfer*.

J. K. ſtands for *James Kewer*.

J. L. *fec*. ſignifies *Johannes Livius fecit*. He engrav'd after *Rembrant*'s manner.

I. M. ſtands for *Iſrael Meck* in certain ſubjects of the paſſion, and other plates, *ſee* I. V. M. The ſame mark was alſo us'd by *Iſrael Martino*, ſuppos'd to be the ſame with *Bon Martino*, who liv'd in 1490.

IMITATION, is repreſented [in *Painting*, &c.] by a woman holding pencils in her right hand, a mask in her left, and an ape at her feet.

The pencils are the inſtruments of the art that imitates colours; and the figure produced by nature, or by art itſelf; the mask and ape demonſtrate the imitation of human actions; the ape imitates men, and the other the deportment of men upon the ſtage.

IMPERIAL LILLY [in miniature] this flower is of 2 colours, *viz. yellow* and *red*, or *orange* colour.

Colour the *firſt* with *orpiment*, and ſhade with *gall-ſtone* and a little *vermilion*.

Cover the *ſecond* with *orpiment* and *vermilion*, and ſhade with *gall-ſtone* and *vermilion*, doing the beginning of the leaves, next to the ſtalk, with *lake* and *bytre* very deep, and all veins of this mixture along the leaf.

Do the *green* with *verditer* and *maſticole*, ſhaded with *iris* and *gamboge*.

INCONSTANCY, is repreſented [in *Painting*, &c.] by a woman all in blue, ſetting her foot upon a great crab; like the *cancer* in the zodiac; with the moon in her hand. The crab denotes irreſolution, it going ſometimes forward, and ſometimes backward: ſo do fickle men. The moon, changeableneſs, never remaining for one hour the ſame. The blue reſembles the colour of the waves of the ſea, which are extreme inconſtant.

How to draw with INDIAN INK. This is to be done after the manner of waſhing, or inſtead of *Indian*, you may temper ***lamp-black*** or ***burnt bread***.

Temper either of theſe in fair water, in a ſhell, or upon your hand; and the out-lines having been firſt drawn with a coal or black lead, dip the point of an indifferent ſharp pencil into fair water, and then into the *indian ink*, and draw all the outlines of your picture very faintly.

2. Take notice, that all the temperature of ***Indian Ink*** muſt be very thin, wateriſh, and not too black.

3. When it is dry, rub out the out-lines, which you drew with the coal, with a bit of ſtale white bread; if too black, then daſh on your ſhadows very faintly, and deepen by degrees, at pleaſure; and finiſh it with ſtipples, it being moſt advantageous to any one who ſhall practiſe limning.

4. Be ſure not to take too much ink in your pencil, which you may prevent by drawing it thro' your lips.

5. Never lay your ſhadows on too deep, but deepen them down by degrees; for if they are too deep, they cannot be heightened again.

INDIAN RED, is a colour of a body; yet is uſeful for a back-ground for flowers, at a diſtance, being uſed with gum-water.

There is alſo an earth brought from the *Iſle of Wight*, which has been found to mix extremely well with gum-water; tho' it being of a viſcous nature, it requires leſs gum than moſt other colours, and as it is naturally fit for uſe, without grinding, and is viſcous, ſo it will, without doubt, mix with *oil*, as well as with water.

There is one thing very extraordinary in this earth, *i. e.* that if you rub a deal-board with it, it makes it exactly of the colour of *mohogany* wood, and ſtains it ſo deep, and with ſo much ſtrength, that it is hard to get it out with waſhing.

And tho' the earth is very dry, yet it has not been able to be got out of papers, in which it has been carried in a pocket.

INDIAN BEAN, to paint (in miniature) ſhade the middle leaves with *lake* only; and add to it a little *ultramarine* for the reſt: as for the *green*, *verditer*, and ſhade with *Iris*.

INDIAN WOOD, call'd alſo *Jamaica* and *Campeche wood*, is taken out of the heart of a large tree, growing plentifully in the iſles of *Jamaica*, *Campeche*, &c. It is uſed in dying; its decoction is very red: and it has been obſerv'd, that putting ſome of this decoction into 2 bottles, and mixing a little powder of *Alum* with the one, it will become of a very beautiful red, which will hold; the other in a day's time becoming yellow, tho' both bottles were ſtopp'd from the air alike; and if a little of the ſame decoction were expos'd to the air, it would become as black as ink, in the ſame ſpace of time.

INDIGO, a drug of a deep *blue* colour, brought hither from the *Weſt-Indies*.

It is made of the leaves of a plant, call'd by the *Spaniards Anil*, and by us *Indigo*.

The method of preparing it is as follows;

When the plant has grown to a certain height, and its leaves are in a good condition, they cut down, and throw it into a kind of vat, putting to them as much water as will cover them.

Theſe are boil'd together for the ſpace of 24 hours; and at the top ſwims a ſcum, with all the different colours of the rainbow.

Then the water is let off into another veſſel, where they agitate it, and ſtir it about laboriouſly, with five or ſix poles fitted for that purpoſe. This they do till the water becomes of a deep green, and till the *grain* (as they call it) forms itſelf; which they diſcover, by taking a little of it out into another veſſel, and ſpitting in it; for if then they perceive a blueiſh dreg ſubſiding, they ceaſe beating it. The matter then precipitates of itſelf, to the bottom of the veſſel; and when it is well ſettled, they pour off the water.

After this, they take off the *Indigo*, and put it into little linnen bags, and let it drain; this done, they put it into ſhallow wooden boxes, and when it begins to dry, they cut it into ſlices, and ſet them to dry and harden in the ſun.

There are ſeveral ſorts of *Indigo*, the beſt is that call'd *Serquiſſe*, after the name of a village where it is prepar'd.

We chuſe it in flat pieces of a moderate thickneſs, pretty hard, clean, light enough to ſwim in the water, inflammable, of a fine blue colour, marked a little on the inſide with ſilver ſtreaks, and appearing reddiſh when rubb'd on the nail.

Indigo is us'd by Painters, who grind and mix it with white, to make a blue colour; for without that mixture, it would paint blackiſh.

It is alſo mix'd with yellow, to make a green colour. It is alſo us'd by dyers.

To prepare for the INDIGO *Dye*. You muſt firſt have the ground of a dye, which is to be put into the kettle, and made as warm as you can bear it; and afterwards prepare a lye of pot-aſhes.

The kettle muſt be firſt fill'd with water and made to boil, then the pot-aſhes are to be put in; boil them, and then put in a bowl-full of *bran*, and three handfuls of *madder*; boil them all for a quarter of an hour; then remove the fire, and pound the *Indigo* in a mortar to an impalpable powder, and pour ſome of the lye upon it. Let it ſtand to ſettle, and then pour ſome of the Indigo dye into the blue dye copper, and proceed thus, till the proper quantity of *Indigo* is turn'd into the dye: then beat what remains a ſecond time, and let it ſtand to ſettle, and pour the lye into the blue copper, repeating this till you have turn'd a proper quantity of *Indigo* to lye, which muſt all be poured into the copper, then you muſt proceed to dye your ſtuffs, *&c.*

The Indigo dye. Allow to every quarter of a pound of *Indigo* a pound and a half of *pot-aſhes*, and a quarter of a pound of *madder*, 3 handfuls of wheaten bran, boil theſe for 7 or 8 minutes, and then let it ſtand to ſettle; pour off the clear part of the ſuds or liquor, and pound the *Indigo* very fine, and mix it with a ſufficient quantity of freſh *woad*, or ſtale *Indigo*, and then pour the ſuds upon it, and let it boil for 24 hours, and it will be ready to dye withal.

To prepare the dye copper. Firſt throw in a pint of *wheaten bran*, next to that the *woad*, and after that, 2 pound of *madder*, then fill the copper with water, and make it boil for 3 hours; then pour it off into the vat, and let it ſtand till it is of a due conſiſtence; then boil the copper full of water, and pour it into the dye ſuds, and cover it up warm; let it ſtand 2 hours to ſettle, and look upon it every hour, till it becomes blue.

Then, according to the quantity of ſtuffs to be dyed, put in 3 or 4 pound of *Indigo*, and 3 pound of *pot-aſhes*, let it ſtand to ſettle and dye with this liquor; taking care always to ſtir it; cover it cloſe, and let it ſtand 2 hours after every time you have dyed with it: after which time you may dye with it again, adding a ſufficient quantity of *lime*, if you uſe it often, always letting it ſtand 2 hours, and then adding *lime* and ſtirring it.

How to prepare the INDIGO *dye for the lye, in conjunction with the* Provence BLUE, *and make it laſting for ſtuffs, ſilks, woollen, and linnen.*

If the ware is to have a deep dye, you muſt firſt prepare it in *tartar* and *vitriol*; but if of a light dye, in *alum* and *tartar*.

Boil 3 pound of *brown wood* in a bag, in a kettle of water, for half an hour, then take it out and dry it, and let the dye grow cool enough for you to bear your hand in it; then make uſe of your *Indigo* and *Aſhes* (as in the direction for the blue dye) with all the reſt of the uſeful and remedying drugs, from beginning to the end, as there directed.

When the blue dye has ſtood 24 hours, and the Indigo has come to its perfect ſtrength, and begins to be blue, firſt dye what you would have of a deep blue, and the lighteſt laſt: and having work'd the dye half an hour, let it reſt for an hour, and ſo on as long as you work it.

If the lye be too weak, you may ſtrengthen it at pleaſure.

The way of mixing the Provence blue with woad for ſilk, woollen, and linnen ware; and to improve the BLUE.

It requires 3 waters to prepare the woad, and if you would uſe the *Provence blue* with *woad* and *indigo*, no *brown wood* is to be put in the firſt water, and then you muſt conſider how the woad comes from the lye.

For the ſecond water; boil a pound of *brown wood* in a bag; to be ſure taking care that there be no *bran* in the water.

For the third water, uſe 2 pound of *brown wood*, but if you would have the dye deeper, then make your dye deeper in the firſt operation.

To dye linnen thread BLUE. For every 6 pound of thread, take half a pound of *Alum*, 5 ounces of *tartar*, 2 quarts of ſharp lye, ſet it over in the fire, and as ſoon as it boils, put in the thread, and let it ſoak there for 4 hours; then rinſe or paſs it through freſh water.

And afterwards dye it blue. Take a pound of boiled *brown wood*, 3 quarters of an ounce of *verdigreaſe* powdered, one quart of ſharp lye, the galls of 2 oxen or cows, half an ounce of calcin'd *tartar*, half an ounce of calcin'd white *vitriol*; put in the thread at twice, ſo that you may dye it light or deep at pleaſure; and then the thread having firſt lain two hours in the woad lye, muſt be rinſed clean out.

If it be put into this lye when it is cold, it becomes much brighter and bluer, than if put in when boiling hot; but the moſt laſting dye for thread is perform'd with woad.

But if you would dye in the *Indigo* copper, you are not to uſe the ſame *preparation ſuds*, as in this dye, and the colour will be durable.

And laſtly, the thread dyed with *Indigo*, ought to be rinſed through warm water, in order to give it the better luſtre.

INDOCIBILITY, is repreſented [in *Painting*, &c.] by a woman of a ruddy complexion, lying all along, holding an aſs by the bridle, the bit in his mouth, in one hand, and leans her elbow of the right arm upon an hog on the ground, a black hood on her head.

On the ground ſignifies her indocility, not being able to riſe higher, but ſtands ſtill; her ignorance is imitated by the aſs. The hog denotes inſenſibility and ſtupidity, never being good till dead. The hood intimates, that black never takes any other colour.

INDUS, the River, is painted with a grave and jovial aſpect, crowned with a garland of its country flowers, by its ſide a camel (from *χάμαι*) it is repreſented pleaſantly grave; as an emblem of the *Indian* policy.

This is ſaid to be the greateſt river in the world, receiving into its chanel 60 other great and famous rivers, and above 100 leſſer.

INGENUITY, is repreſented [in *Painting*, &c.] by a young ſpark of a vehement daring aſpect; with a helmet, whoſe creſt s an eagle's wings of divers colours on his ſhoulders, with a bow and arrow, as if he would let fly.

This youth ſhews that the intellect never grows old; his aſpect, ſtrength and vigour; the eagle, generoſity and loftineſs; the bow and arrow, inquiſitiveneſs and acuteneſs.

INJUSTICE, is repreſented [in *Painting*, &c.] by a man n a white garment full of ſpots; a ſword in one hand, and a globe in the other; the tables of the law all broken to pieces on the ground; blind of the right eye; trampling on the balance. The garment denotes injuſtice to be the corruption and ſtain of the mind; the laws broken, the non-obſervance of them, being deſpiſed by malefactors; and due weighing of matters neglected, s intimated by the balance. The blind eye ſhews that he ſees only with the left, that is, what is for his own intereſt.

INK, *a very good Black for Writing.* Take *rain water* wo quarts, nut *galls* only broken into bits half a pound, *copperas* 4 ounces, *alum* 4 ounces; infuſe all in a gentle heat for a month, add *gum Arabick* 4 ounces, which diſſolve in it, and keep the mixture for uſe.

Another black writing INK. Take rain-water 2 quarts, nut-galls broken into little bits 4 ounces; digeſt them in a ſand-heat or a week: then diſſolve 2 ounces and a half of *vitriol* or *opperas* in a pint of rain water by boiling it gently; adding n the diſſolution a little *gum Arabick*: being diſſolved, mix it vith the water and galls; digeſt in a ſand-heat for a week; and keep the clear for uſe.

Another very good INK *for writing.* Take ponderous galls, ounces, reduce them to powder, infuſe them in 3 pints of ain-water, ſetting it in the ſun or a gentle heat for 2 days; hen take common or *Roman* vitriol 3 ounces, powder it, put t in, and ſet it in the ſun for 2 days more, ſhake it well, and add an ounce of good gum *Arabick.*

Another good black INK. Take 3 pints of rain-water, 3 ounces of nut-galls broken into little bits, digeſt them in a ſand-heat for a week, then add 2 ounces of copperas or vitriol to a pint of rain-water, boil it gently till it is diſſolved, adding to the diſſolution a little gum Arabick, which, when it is diſſolved,

ſolved, mix it with the water and galls; digeſt it for a week in a ſand-heat, and keep the clear for uſe.

Another black writing INK. Take white wine 2 quarts, *log-wood* ground, or ſhavings of it, one pound: boil them till a quart is conſumed; then ſtrain the liquor from the wood, and put into it 8 ounces of nut-galls bruiſed, *pomegranate* peels 4 ounces; mix and digeſt in a ſand-heat for a week, ſhaking it 4 or 5 times a day: then add to it 4 ounces, of *roman vitriol* or *green copperas*, and digeſt it 2 days more; after which, add *gum Arabick* 4 ounces; digeſt 24 Hours, and ſtrain all out into another veſſel, and keep the Ink for uſe.

Note, 1. That the *fæces* will ſerve again for the ſame quantity of liquor or logwood Infuſion.

2. That rain-water ſeems to be better for this purpoſe than white wine.

3. That probably the quantity of *gum Arabick* is too much.

Another very good black writing INK. Take ſtrong ſtale beer half a gallon (or white or red wine the ſame quantity) old nails 3 or 4 pounds; digeſt in a cold place for 8, 10, or 12 months; then decant off the clear liquor or tincture. Take *Catechu* in fine powder 3 ounces, common brandy half a pint, mix, and in a ſand-heat make a ſtrong tincture, which decant: mix this with the former tincture, and it becomes a black Ink.

Another very excellent black writing INK. Take water in which a large quantity of old nails has lain for a year or two, a gallon, nut-galls broken into little bits a pound; common vitriol or copperas 4 ounces; infuſe all together for a month, ſtirring or ſhaking the veſſel very well 5 or 6 times every day.

Then add *gum Arabick* cut into bits 2 ounces; diſſolve and keep it continually ſtirring once or twice every day.

Note, When you uſe it, you may put in a little white ſugar-candy, and diſſolve it, ſo will your writing ſhine; but it ought not to be put in, but as you have occaſion for it; for after 3 or 4 days it ſpoils the Ink.

Another very good black INK. Take *Thames* or rain-water 2 quarts, nut-galls only broken into ſmall bits half a pound; copperas 2 ounces; infuſe all in a gentle ſand-heat for 6 weeks ſhaking the bottle 4 or 5 times every day; then diſſolve in it 4 ounces of *gum arabick*, (or leſs may be better) and let it ſtand upon the fæces for uſe.

To make the LONDON *Powder* INK. Take 10 ounces of the cleareſt nut-galls, bruiſe them and ſift the powder very fine; then add 2 ounces of white *copperas*, 4 ounces of *Roman* vitriol, *gum Arabick* or *ſandarach* an ounce; pound and ſift them very fine, ſo that though they appear white, a little of it being put into water, it will in a little time turn black; and an ounce of powder will make a pint of very black Ink.

To make JAPAN, *or ſhining* INK. Take *gum Arabick* and *Roman vitriol* of each an ounce, galls well bruiſed a pound, put them into *rape vinegar*, or *vinegar* made of clear ſmall beer; ſet them in a warm place; ſtir them often till the liquor becomes black; then add to a gallon an ounce of *ivory black*, and a quarter of a pint of *ſeed-lac* varniſh, and it will be a curious black ſhining Ink.

To make a POWDER INK, *to rub on Paper*. Take about 20 nut-galls, reduce them to a very fine powder; take half an ounce of *Roman vitriol*, and as much gum *Arabick* and *gum ſandarach*, powder and ſift them very fine, then mingle them together, and rub the paper hard with a piece of cotton, and poliſh it with a piece of ivory; write with water, and in a little time the letters you write will appear a fine black, as if written with the beſt Ink.

To make China INK. Take *lamp-black* purified 8 ounces, *indigo* 2 ounces, ivory black one ounce, peach-ſtone black half an ounce: beat all together, and make a maſs; make it into a paſte with *water* in which a very little *gum Arabick* has been diſſolved; and ſo form them into long ſquare tablets.

A ſhining Japan *or* China INK. Take an ounce of lamp-black, and clarify it in an earthen pipkin to take out the droſs, 2 drams of *indigo*, half a dram of *peach black*, one dram of black *endive* burnt; reduce them to a very fine powder, and then with a moiety of fig-leaf water, and another part of *milk*, and a very little gum *Arabick*, when they are well mixed, make them up for uſe.

To make Indian INK. Take horſe-beans, burn them till they are perfectly black, grind them to a fine powder, and with a weak gum *arabick* water make it into a paſte, which form into long ſquare cakes.

A black INK *which vaniſhes in* 24 *hours*. Boil or digeſt nut-galls 24 hours, in groſs powder, in *aqua fortis*, add to them *vitriol* or *copperas* and a little ſal armoniack, and it is done: what is written with this will vaniſh in 24 hours.

To make Red writing INK. Take raſpings of Brazil one ounce, white lead and alum of each 2 drams; grind and mingle them, infuſe them in urine one pound, with 2 ſcruples of gum *Arabick*, or a dram at moſt.

Another Red INK. Take wine vinegar a pint, raſpings of *Brazil* 1 ounce, *alum* half an ounce, infuſe all for 10 days; then boil it gently, and add to it 5 drams of *gum arabick*; diſſolve the gum, ſtrain and keep it for uſe.

Note, that 2 drams of gum in ſome caſes may be enough.

To make Red writing INK *with Vermilion*. Grind vermilion well upon a porphyry ſtone with common water; dry it and put it into a glaſs veſſel, to which put urine; ſhake it, let it ſettle, then pour off the urine, and put on more urine: repeat this changing the urine 8 or 10 times; ſo will the *vermilion* be well cleanſed; to which put glair of eggs to ſwim on it above a finger's breadth; ſtir them together, and when well ſettled, abſtract the glair: then put on more glair of eggs, repeating the ſame operation 8 or 10 times alſo, to take away the ſcent of the urine; laſtly, mix it with freſh glair, and keep it in a glaſs veſſel cloſe ſtopped for uſe; and when you uſe it, mix it with water or vinegar.

To make Red Printing INK. Grind *vermilion* very well with liquid varniſh or linſeed oil.

To make a Blue INK. Grind *Indigo* with honey mixed with glair of eggs, or glue-water made of *iſing-glaſs*, diſſolved in water and ſtrained.

To make Green INK *to write withal.* Make fine Verdigreaſe into paſte with ſtrong *vinegar*, and infuſion of green *galls*, in which a little gum arabick has been diſſolved; let it dry, and when you would write with it, temper it with infuſion of green galls, *&c.*

Another Green INK. Diſſolve *verdigreaſe* in *vinegar*, then ſtrain it, and grind it with a little honey and mucilage of *gum tragacanth* upon a porphyry ſtone.

Another Green INK. Boil *verdigreaſe* with *argol* in fair water, and then diſſolve in it a little *gum Arabick*, and it will be good.

A Green Printing INK. Grind *Spaniſh* green with liquid *varniſh*, or linſeed oil; and after the ſame manner you may make a Printer's Blue, by grinding *azure* with *linſeed* oil.

An INK *to write upon black paper.* Diſſolve *Tin-glaſs*, or *Spelter*, in *aqua fortis* made of nitre and alum; precipitate with oil of *tartar*; edulcorate perfectly with fair water, and dry it in a glaſs Baſon; mix this powder with gum water, and it will be white, with which you may write on black paper: and with pure white *flowers* of *antimony* you may do the ſame.

To take INK *out of printed books or pictures.* Wet a little *aqua fortis* upon it, and it will be ſpeedily out; then waſh it over with a little alum water or vinegar, and it will kill the *aqua fortis*, which otherwiſe will either eat the paper, or make it yellow. *Spirt of vitriol* will do the ſame.

INSPIRATION is repreſented [in *Painting* &c.] by a glittering ray in a ſtar-light night, darting at the breaſt of a young man in yellow; his hair knotted, mix'd with ſerpents; looking up to heaven, holding in one hand a naked ſword, the point to the ground, and a ſun-flower in the other. The ſtarry sky ſignifies the grace of GOD inſpiring the mind; the hair, *&c.* that a ſinner can have only brutiſh and horrid thoughts; looking upward, that without grace and inſpiration the mind cannot be elevated above earthly things. The Heliotrope denotes that as it always turns toward the ſun, ſo a ſinner once inſpired turns with all affection towards GOD.

INSTITUTION is repreſented [in *Painting*, &c.] by a woman holding in her hand a little basket with ſwallows in it; which they ſay is the Hieroglyphick of *Inſtitution* among the *Egyptians*, from the benefit given to mortals by *Oſyris* and *Ceres*, from whom they received the laws of living well, and the precepts of tilling the ground; *Oſyris* was taken for *Jupiter*, and *Ceres* the Goddeſs of Corn.

Manual INSTRUMENTS *uſed in Painting*, &c. Theſe are four; *viz.* the *Grinding-Stone* and *Muller*, *Pencils* and *Tables* to limn on; and little ſhells, gallipots, or glaſſes to hold your colours.

As to the *grinding-ſtone*, it may be of *porphyry*, *ſerpentine*, or *marble*, but rather a *pebble*, for that is the beſt of all other; the *muller* only of *pebble*, which keep very clean.

Theſe may eaſily be bought of marblers or ſtone-cutters in London, *&c.*

As for *Pencils*, chuſe thoſe that are faſt in the quills, and that come to ſharp points after you have drawn them 2 or 3 times through your mouth; ſo that although large, their points will come to be as ſmall as a hair, which then are good; but if they ſpread, or have any extravagant hairs, they are naught.

Theſe *Pencils*, after they have been often uſed, muſt have their ends well rubb'd with ſoap, and be then laid a while in warm water to ſteep, and afterwards taken out and be well waſhed in fair water.

As for the *Table*, it muſt be made of pure fine *paſte-board*, ſuch as cards are made of (of what thickneſs you pleaſe) very finely ſlick'd, and glaz'd with a dog's tooth.

Take a piece of this paſte-board of the bigneſs you intend the picture, and a piece of the fineſt and whiteſt parchment you can get, (virgin parchment) which cut of equal bigneſs with the paſte-board; with thin white new-made ſtarch; paſte the parchment to the paſte-board, with the out-ſide of the skin outwards; lay the ſtarch on very thin and even, and being thus paſted, let it dry thoroughly: then the *grinding-ſtone* being clean, lay the *card* thereon with the parchment ſide downwards, and rub the other ſide of the paſte-board as hard as you can, with a boar's tooth ſet in a ſtick; then let it be thoroughly dry, and it will be fit to work or limn any curious thing upon.

The ſhells, *&c.* which hold or contain the colours ought to be horſe muſcle-ſhells, which may be got in *July* about the ſides of rivers; but the next to theſe are ſmall muſcle-ſhells, or inſtead thereof little glaſſes made in the ſame form.

Having thus prepared your table and card, lay a ground of fleſh-colour before you begin your work; and this muſt be tempered according to the complexion of the face to be drawn.

If the *complexion be fair*, temper *white, red-lead, and lake together*; if a *ſwarthy one*, temper with the white and red a little fine *maſticote*, or *Engliſh oker*.

But you are to take notice, that your ground ought always to be fairer than the face you are to draw; becauſe it is an eaſy matter to darken a light colour; but difficult to lighten a deep one.

Having thus prepared your ground, lay it upon your card with a pencil full of colour, and rather thin and wateriſh, than thick and groſs, and with 2 or 3 daubs of your large pencil lay it on in an inſtant; the quicker it is laid on, the evener the colour will lie.

Be ſure that you cover rather too much of your card than too little with this prime colour; ſomewhat more of the card with the ground colour, than you ſhall employ for the face.

Then take a pretty large pillar of ivory or *cocus wood*, and before you begin to work, temper certain little heaps of ſeveral ſhadows for the face, which mix with your finger about the pallat.

The Names of the principal Inſtruments that are uſed in the Art of making Glaſs. [See the Plate.]

The hollow pipe marked A ſerves to blow the glaſs; it ought to be of iron, with a little wooden handle on the top.

The rod marked B ought to be of iron, but not hollow; this ſerves to take up the glaſs after it is blown, and cut off the former, ſo that there remains nothing to do to it, but to perfect it.

The ſciſſors mark'd C are thoſe which ſerve to cut the Glaſs when it comes off from the firſt hollow Iron, when it is given to the maſter-workman.

The ſhears marked D ſerve to cut and ſhape the great glaſſes, as alſo the leſſer, to open them and make them more capacious.

The inſtruments marked E ſerve to finiſh the work, which the *Italians* call *Ponteglo*, *Paſſago*, *Procello*, *Spiei*, and alſo *Borſello*, whereof we want the figure.

The great ladle marked F is of iron, the end of the handle being only done over with wood; it is with this you take out the metal of the great pot when it is refined, and put it into the little ones for the work-men.

The little ladle marked G is alſo of iron, and covered with wood at the handle; this ſerves for ſkimming the metal, and taking

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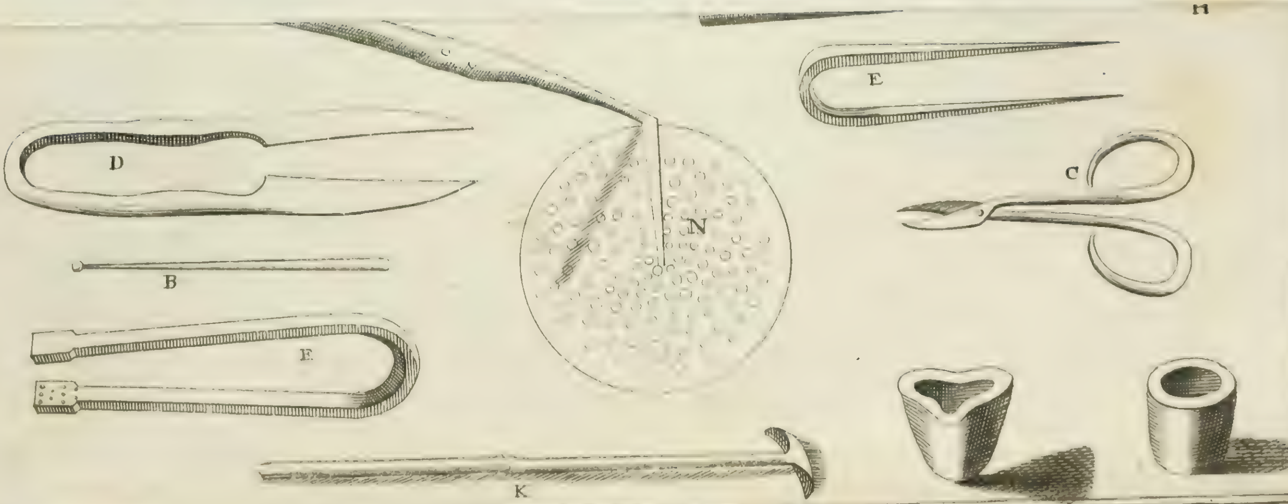

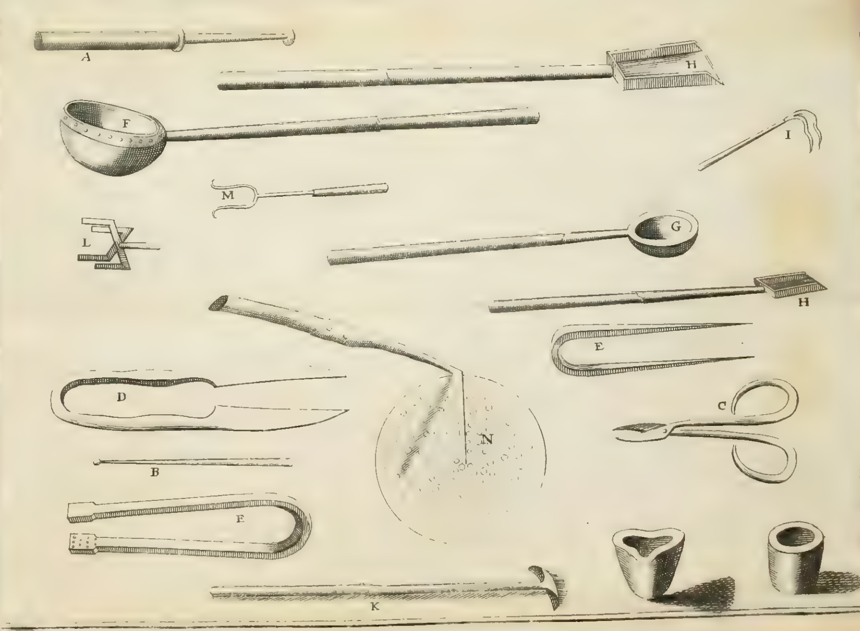
A
H
F
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K

off the *Alkalick Salt* which ſwims on the top, as alſo to take the metal out of the pots, and caſt it into water to refine it after a method to be hereafter treated of in its place.

The great and little ſhovels, or peels, marked H, and which are hollow, having the edges turned up all round except at the end, ſerve only to take up the great glaſſes. The leſs is called the little ſhovel, and they make uſe of one like this to draw out the coals and aſhes of the furnace where the fire is made.

The hooked fork marked I ſerves to ſtir the matter in the pots; it ought to be all of iron except the handle.

The rake marked K is alſo of Iron, and the handle of wood, it ſerves to ſtir the matter, as alſo to move about the fritt in the firſt oven.

The inſtrument marked L is for making chamber-pots.

The fork marked M is made alſo of iron, and the handle of wood; there are of them of ſeveral bigneſſes, they ſerve to carry the glaſs-works into the upper oven to cool them. They make uſe alſo of forks in glaſs-houſes, when they change the pots in the furnace.

The great ladle, marked N, is of braſs, and hollow, full of holes about the bigneſs of a pea; its handle towards the bottom is of iron, and the top of wood. This ladle ſerves to take off the *Alkalick* ſalt from the kettles, as faſt as the lee evaporates.

There are alſo ſeveral moulds both of marble and braſs, and alſo of copper, which ſerve to make their forks of ſeveral figures, accordingly as the workman deſigns them in blowing, which would be too tedious here to deſcribe.

INTAGLIO'S, are precious ſtones, having the heads of great men, inſcriptions, and the like engraven on them; ſuch as we frequently ſee ſet in rings, ſeals, *&c.*

INTELLIGENCE is repreſented [in *Painting*, &c.] by a woman in a golden crape gown; crowned with a garland; holding a ſphere in one hand, and a ſerpent in the other.

The gown ſhews that ſhe ſhould be always ſplendid, and precious like gold, averſe from abject notions; the ſphere and ſerpent, her creeping along into the principles of natural things, that are more imperfect than ſupernatural, and more ſuitable to the ſphere of our activity.

INVENTION, [in *Painting*, &c.] is the choice which the painter makes of the objects that are to enter the compoſition of the piece.

Du Pile obſerves, that *Invention* differs from *Diſpoſition*, and that 'tis theſe two things together that form *Compoſition*.

For after having made a good choice of objects proper for the ſubject, they may be ill diſpoſed, and then, tho' the *Invention* be never ſo good, the *Diſpoſition* or ordonnance will be faulty, and the piece will diſpleaſe.

Of all the parts of *painting*, *Invention* is that which gives the painter the faireſt occaſions of ſhewing his genius, his imagination, and good ſenſe.

M. *Felibien* gives the name *Invention* to every thing that depends on the genius of the painter, as the ordonnance, the diſpoſition of the ſubject, and even the ſubject it ſelf when it is new.

But the term *Invention* taken in this ſenſe is no term peculiar to painting, but agrees alſo to other arts.

In another place M. *Felibien* diſtinguiſhes *Invention* into two kinds, to wit, that which ariſes immediately from the mind of the painter, and that which he borrows from ſome other.

INVENTION, is repreſented [in *Painting*, &c.] by a woman. This miſtreſs of arts appears in a white robe, whereon is written NON ALIUNDE; having alſo two little wings on her head; in one hand holding an image of nature, a cuff on the other, with the motto AD OPERAM.

Youth denotes many ſpirits in the brain, where invention is formed; the white robe the pureneſs of it, not making uſe of other men's labour, as the motto ſhews The wings, elevation of intellect; naked arms, her being ever in action, the life of invention; the image of nature ſhews her invention.

JO. GUILL. BAURN, ſignifies *John William Baurn.*

JO. AN. BX. ſignifies *John Antonius Brixianus*, 1538.

JOHN ab EYK, commonly call'd *John* of *Bruges*, the happy inventor of the art of painting in oil, *anno* 1410, diſciple of his brother *Hubert*, excell'd in hiſtory-painting, died in 1441, aged 71 years.

CORNELIUS JOHNSON, alias JANSENS, was an excellent painter both in great and little; but above all his portraits were admirably well done. He was born in, and reſided a long while at *Amſterdam*, from whence he came over into *England* in the reign of king *James* I. and drew ſeveral fine pictures after that king, and moſt of the court. He alſo lived in the time of king *Charles* I. and was contemporary with *Van Dyke*; but the great fame of that maſter ſoon eclipſed his merits, tho' it muſt be owned his pictures had more of neat finiſhing, ſmooth painting, and labour in drapery throughout the whole; yet he wanted the true notion of *Engliſh* beauty, and that freedom of draught, which the other was maſter of: he died in *London*.

MARTIN JOHNSON, the famous ſeal-graver, was alſo an extraordinary landſkip painter after nature; he was bred, it's true, to graving ſeals, but painted in his way equal to any body; he arrived at a great excellency in landskip views, which he ſtudied with application, making a good choice of the delightful proſpects of our country for his ſubjects, which he performed with much judgment, freeneſs, and warmth of colouring. Several of his landskips are now in the hands of the curious in *England*, tho' they are very ſcarce; he died in *London* about the beginning of king *James* II's reign.

JONQUIL, [to paint in miniature] lay on *maſticote* and gall-ſtone, and finiſh it with *gambooge* and gall-ſtones: for the leaves and ſtalks uſe *ſea-green*, ſhaded with *Iris-green*,

JOVIALNESS, is repreſented [in *Painting*, &c.] by a lady with a compoſed countenance, but ſomewhat wandering eyes, dreſſed in a light habit, with a crown of *amaranth*, holding in both hands an olive-branch with fruit, on the top of which is an honey-comb with bees.

The *amaranth* denotes ſtability and merrineſs, for it never withers. The olive and honey-comb denote mirth and long life, whereunto honey conduces.

JOY, is a pleaſant emotion of the ſoul, in which conſiſts the enjoyment of a good, which the impreſſions of the brain repreſent as hers.

If the ſoul be poſſeſs'd with *Joy*, the forehead is ſerene, and the eye-brow without motion, and rais'd in the middle; the eye moderately open and ſmiling; the eye-ball brisk, and ſhining; the noſtrils a little open; the corners of the mouth are a little rais'd; the complexion lively; and the cheeks and lips ruddy. *See the plate.*

In *Joy* the pulſe is even and quicker than ordinary, but not ſo high nor ſo ſtrong as in *Love*; and one feels an agreeable warmth, which is not only in the breaſt, but ſpreads itſelf into all the exterior parts of the body.

IRIS, is repreſented [in *Painting*, &c.] as a nymph with large wings, extended like to a ſemi-circle, the plumes ſet in rows of divers colours, as *yellow*, *green*, *red*, *blue*, or *purple*; her hair hanging before her eyes; her breaſts like clouds; drops of water falling from her body, and in her hand *Iris*, or the *Flower de Lis*.

IRIS, [in *Painting* and *Miniature*] is done as follows;

The *Perſian* or *Indian Iris* is done by covering the innermoſt leaves with *white*, and ſhading them with *indigo* and green mixed together, leaving a ſmall white ſeparation in the middle of each leaf.

As to the outward leaves, you muſt in the ſame part lay on a lay of *maſticote*, and ſhade it with *gall-ſtone* and *orpiment*, making ſmall, deep, and longiſh dots or ſpots, at ſome ſmall diſtance from each other, upon the upper ſide of all the leaf, and at the end of each leaf, make large ſpots of *biſtre* and *lake* for ſome, and of *indigo* alone for others, but very deep.

The reſt, and the outſide of the leaves muſt be of the ſea-ſort, and *maſticote*, very pale, and ſhaded with bladder green.

Another ſort of *Iris* is laid on with *purple* and *white*, mix'd up with a little more *carmine* than *ultramarine*; and for the ſhades, but eſpecially for the middle leaves, diminiſh the quantity of the *white*; and on the contrary, let the *ultramarine* overpower the *carmine*. And with this colour expreſs veins, leaving a ſmall *yellow* nervure on the inſide in the middle of the leaves.

Other *Iris's* again have this nervure on the firſt leaves, whoſe end only is bluer than the reſt.

Others again are ſhaded and finiſhed with a redder purple, and have alſo a nervure in the middle of the leaves without; which is to be *white*, and ſhaded with *indigo*.

Some of them again are yellow, and are done with a lay of *orpiment* and *maſticote*, ſhaded with gall-ſtones, with veins of biſtre on the upper ſide of the leaf.

The *greens* of them all muſt be of the ſea-colour, mix'd with a little *maſticote* for the ſtems and ſtalks, and ſhaded with bladder green.

IRON, is a hard, fuſible and malleable metal, conſiſting of an earth, ſalt, and ſulphur; but all impure, ill-mixt, and digeſted, which render it very liable to ruſt.

It is the hardeſt, dryeſt, and moſt difficult to melt of all metals.

It may be ſoftened by heating it often in the fire, hammering it, and letting it cool of itſelf; and extinguiſhing it in water hardens it.

It may be rendred white by cooling it in *ſal-ammoniac* and *quick-lime*.

The ſtrongeſt temper of *Iron* is ſaid to be that, which it takes in the juice of ſtrain'd worms.

A red-hot *Iron* apply'd to a roll of ſulphur, will diſſolve and fall into a fine duſt, or drop'd into water, will compoſe grains; which is call'd *granulating it*.

Iron has a great conformity with copper; ſo that when ſoldered together, they will not eaſily ſeparate.

It has alſo a great conformity with the load-ſtone. *Rohault* ſays it is an imperfect load-ſtone, and that if it be a long time expos'd in a certain ſituation, it will become a real *load-ſtone*; and mentions the *Iron* in the ſteeple of *Notre-Dame* at *Chartres* as an inſtance.

There are ſeveral kinds of *Iron*, which have properties very different from one another.

1. *Engliſh Iron*, which is coarſe, hard, and brittle, fit for fire-bars and ſuch uſes.

2. *Swediſh Iron*, which of all others is the beſt us'd in *England*. It is fine and tough, and will beſt endure the hammer, is ſofteſt to file, and in all other reſpects the beſt to work upon.

3. *Spaniſh Iron*, which would be as good as the *Swediſh*, were it not ſubject to *red-ſear*, i. e. to crack betwixt hot and cold.

4. *German Iron*. This ſort is called *Dort-ſquare*, becauſe it is wrought into bars of 3 quarters of an inch ſquare, and is brought to us from *Dort*. This is a coarſe *Iron*, and only fit for ordinary uſes.

There is another ſort us'd for making of *wire*, which is the ſofteſt and tougheſt of all.

This laſt is not peculiar to any country; but is indifferently made where-ever *Iron* is made, tho' of the worſt ſort; for 'tis the firſt *Iron* that runs from the mine-ſtone, when it is melting, and is reſerv'd purely for making wire.

Generally ſpeaking, the beſt *Iron* is the ſofteſt *and tougheſt*, and that which when it breaks, is of an even greyiſh colour, without any of thoſe glittering ſpecks, or any flaws or diviſions, like thoſe ſeen in broken antimony.

To give *Iron* a blue colour; with a grinding ſtone rub off the black ſcurf, then heat it in the fire, and as it grows hot, it will change colour by degrees; become firſt of a gold colour, and then of a beautiful blue.

Sometimes the workmen rub a mixture of *indigo* and ſallet-oil on it, while it is heating, and let it cool of itſelf.

IRON-ORES ⎫ Of theſe we have a great number in moſt
IRON-WORKS ⎭ parts of *England*; but thoſe in the foreſt of *Dean* in *Gloceſterſhire* are in the greateſt repute, the ore is there found in great abundance, differing much in colour, weight, and goodneſs.

The beſt, which is called *bruſh-ore*, is of a bluiſh colour, very ponderous, and full of little ſhining ſpecks like grains of ſilver; this yields the greateſt quantity of *Iron*, but being melted alone, produces an *Iron* very ſhort and brittle, and therefore not ſo fit for common uſe.

For the remedying of which, the workmen make uſe of another ſort of material, which they call *cinder*; which is nothing but the refuſe of the *ore*, after the metal has been extracted; and which being mingled with the other, in a due quantity, gives it the excellent temper of toughneſs, which is the cauſe that this *Iron* is preferr'd before any other that comes from foreign parts.

After they have procur'd a ſufficient quantity of *ore*, the firſt operation is the calcining of it; this is performed in kilns, much after the faſhion of our ordinary lime-kilns; theſe kilns are filled up to the top with the *coal* and *ore*, layer upon layer; and fire being lighted at the bottom, they let it burn 'till the coal is waſted; and then renew the kilns with freſh *ore* and *coals*, after the ſame manner as before.

This is done without fuſing, *i. e.* melting of the metal, and ſerves to conſume the more droſſy part of the *ore*, and to make it malleable, ſupplying the place of the beatings and waſhings, us'd in other metals.

From hence it is carried to the furnaces, which are built either of brick or ſtone, about 24 foot ſquare on the outſide, and near 30 foot in height within; but not above 8 or 10 foot over, at the wideſt part, which is at the middle; the top and bottom having a narrow compaſs much of an oval form.

Behind the furnace are fix'd 2 huge pair of bellows, the noſes of which meet at a little hole near the bottom; theſe are compreſs'd together by certain buttons, plac'd on the axis of a very large wheel, which is turn'd by water, in the manner of an overſhot mill.

As ſoon as theſe buttons are ſlid off, the bellows are rous'd again by the counterpoiſe of weights, whereby they are made to play alternately; the one giving its blaſt, the time the other is riſing.

At firſt theſe furnaces are filled with *ore* and *cindar*, intermix'd with the fuel, which is charcoal, laid hollow at the bottom, that it may more eaſily take fire; but after it has once kindled, the materials run together in a hard cake or lump, which is born by the form of the furnace; and through this the metal as it melts, trickles down into the receivers, which are plac'd at the bottom, where there is a paſſage open, by which the men take away the ſcum and droſs, and let out the metal, as they ſee occaſion.

A large bed of ſand lies before the mouth of the furnace, in which are made furrows of the ſhapes, into which they would have the *Iron* caſt.

As ſoon as the receivers are full, they let in the metal, which is made ſo very fluid, that it not only runs to a conſiderable diſtance, but ſtands afterwards boiling for a good while.

When the furnaces are once at work, they are kept conſtantly employ'd for many months together, never ſuffering the fire to ſlacken night or day; but ſtill ſupplying the waſting of the fuel and other materials, with freſh, poured in at top: they uſe charcoal altogether in this work, for ſea-coal will not do.

From theſe furnaces the workmen bring their ſows and pigs of *Iron* to the forges, where they are wrought into bars.

To paint IRON [in *miniature*] colour it with *indigo*, a little black and white, and finiſh it with *indigo* alone, heightening with *white*.

To gild IRON *or ſteel.* Take *tartar* 2 ounces, *vermilion* 6 ounces, *bole-armeniack* and *aqua-vitæ*, of each 4 ounces, grind them together with *linſeed-oil*, and put to them the quantity of 2 hazle-nuts of *lapis calaminaris*, and grind therewith in the end a few drops of *varniſh*; take it off the ſtone, ſtrain it through a linnen cloth, (for it muſt be as thick as honey) then ſtrike it over *Iron* or *ſteel*, and let it dry; ſo lay on your ſilver or gold, and burniſh it.

To gild IRON *with water.* Take ſpring-water 3 pound, as many ounces of *roch-alum*, *Roman vitriol* and *orpiment* of each 1 ounce, *verdigreaſe* 24 grains, *ſal gemma* 3 ounces, boil all together, and when it begins to boil, put in *tartar* and *bay-ſalt*, of each half an ounce; continue the boiling a good while, then take it from the fire, and ſtrike the *Iron* over with it, dry it againſt the fire, and burniſh it.

To lay gold on IRON *or other metals.* Take of *liquid varniſh* 2 pound, *linſeed-oil* and *turpentine*, of each 2 ounces, mix them well together, and ſtrike them over *Iron* or any other metal, and afterward lay on leaf-gold or ſilver, and when it is dry poliſh it.

A water for gilding Iron, ſteel, knives, ſwords, and armour. Reduce fire-ſtone to powder, put it into a ſtrong red wine vinegar, for 24 hours, boil it in a glaz'd pot, adding more vinegar as it evaporates or boils away, dip *Iron*, *ſteel*, &c. into this water, and it will come out black; then poliſh it, and you will have a gold colour underneath.

Another way. Take *ſalt-petre*, *roch-alum* burnt, of each an ounce, *ſal-armoniack* 2 ounces, powder them fine, and boil them with ſtrong vinegar in a copper-veſſel, with this wet the *Iron*, and lay on leaf-gold.

Another way. Grind *roch-alum* with the urine of a boy, 'till it is well diſſolv'd, heat the *Iron* red-hot, in a fire of wood-coals, and anoint the *Iron* with the liquor, and it will look like gold.

Another way of gilding Iron. Take of water a pound and a half, of *alum* one ounce, *ſal gemma* an ounce and a half, of *Roman vitriol*, and *orpiment*, of each half an ounce, of *flos æris* 12 grains; boil all with *tartar* and ſalt, as in the firſt preſcription.

To make Iron of the colour of gold. Take *linſeed-oil* 6 ounces, *tartar* 4 ounces, *yolks of eggs* boil'd hard and beaten 4 ounces, *aloes* 1 ounce, *ſaffron* 10 grains, *turmerick* 4 grains; boil all together in an earthen veſſel, and anoint the *Iron* with the oil, and it will look like gold.

If there be not *linſeed-oil* enough, you may put in more;

A golden liquor to colour Iron, wood, glaſs, or bones.

Take a new-laid egg, make a hole at one end, and take out the white, and fill it up with 2 parts of *quickſilver*, and one part of *ſal-armoniac* finely powdered, mix all together with a wire or little ſtick; then ſtop the hole with melted wax, over which put an half egg-ſhell, digeſt them in horſe-dung for a month, and it will be a fine golden coloured liquor.

To ſoften Iron. Put *alum, ſal-armoniack* and *tartar*, of each a like quantity, into good *vinegar*, ſet them on the fire; heat the *Iron*, and quench it in this liquor, or quench it 4 or 5 times in oil, in which melted lead hath been put 6 or 7 times.

To gild IRON *and* STEEL. You muſt firſt give to the *Iron* and *ſteel* the colour of braſs by the following method.

Poliſh the *Iron* or *Steel*, and then rub it with *aqua-fortis*, in which filings of braſs have been diſſolv'd: the ſame is to be done as to *ſilver*.

2. An *amalgama* of gold and *mercury*, with which *ſilver-gilders* gild *ſilver, braſs*, and *copper*, will not gild *Iron* and *ſteel*; but by the following method it may be done.

Firſt coat the *Iron* or *Steel* with *copper*, by diſſolving very good *vitriol of copper* in warm water, 'till the liquor be ſatiated with the *vitriol*; then immerſe the *Iron* or *Steel* ſeveral times in the diſſolution (but having firſt ſecured it bright) and ſuffering it to dry each time of itſelf; for by this immerſion being often enough repeated, enough of the copperous particles will precipitate upon the *Iron* to fill the ſuperficial pores of the *Iron*.

3. By this ſafe and eaſy way, having overlaid the *Iron* with *copper*, you may gild it as *copper*, either by the aforeſaid *amalgama*, or by the method of whitening *copper* or *braſs* artificially, (*which ſee in the articles of* COPPER *and* BRASS)

To make IRON *of a gold colour.* Take *alum* of *melancy* in powder, and mix it with ſea-water; then heat the *Iron* red-hot, and quench it with the water.

To make IRON *of a ſilver colour.* Mix powder of *ſal-armoniack* with unſlack'd lime in cold water, heat the *Iron* red-hot, and quench it in it, and it will be as white as ſilver.

To harden IRON *or* STEEL. Quench it 6 or 7 times in hogs-blood, mixt with gooſe-greaſe at each time, drying it at the fire, before you dip it in again, and it will become very hard, and not brittle.

To ſolder IRON. Put the joints of *Iron* together as cloſe as you can, lay them in a glowing fire, and take of *Venice* glaſs in powder, and the *Iron* being red-hot, caſt the powder upon it, and it will ſolder itſelf.

To tinge IRON *with a gold colour.* Lay plates of Iron and brimſtone in a crucible, layer upon layer, cover it, and lute it well and calcine it in a furnace; then take out the plates, and they will be brittle; put them into a pot with a large mouth, and put in ſharp diſtilled vinegar, digeſting over a gentle heat till they wax red; then decant the vinegar, and add new, doing this till all the iron be diſſolved; then evaporate the moiſture in a glaſs *retort* or *veſica*, and caſt the remaining powder on ſilver or other white metal, and it will look like gold.

To whiten IRON. Firſt purge the *Iron*, by heating it red-hot, and quenching it in water made of *lye* and *vinegar*, boiled with ſalt and alum, doing this ſo often till it becomes whitiſh.

Pound the fragments of iron in a mortar, till the ſalt is quite changed, and that there is no blackneſs left in its liquor, and till the iron is cleanſed from its droſs.

Then amalgamate lead and quickſilver together, and reduce them into a powder: then lay the prepared plates of iron and this powder layer upon layer in a crucible; cover it, and lute it all over very ſtrongly, that the leaſt fume may not iſſue forth, and ſet it into the fire for a day; at length increaſe the fire, ſo as it may melt the Iron (which will be done very quickly) and repeat this operation till it is white enough.

It is whitened alſo by melting with lead the *marcaſite* or *fire-ſtone* and *arſenick.*

If you mix with it a little *ſilver* (with which it readily unites) it gives a wonderful whiteneſs, ſcarcely ever to be changed any more by any art whatſoever.

To render IRON *of a braſs colour.* Take *flowers of braſs*, *vitriol*, and *ſal armoniac* in fine powder, of each a like quantity; boil it half an hour in ſtrong vinegar; take it off, and put in either *iron* or *ſilver*, covering the veſſel till it is cold, and the metal will be like to braſs, and fit to be gilded; or rub poliſhed iron with *aqua fortis*, in which filings of braſs have been diſſolved.

To tinge IRON *of a braſs colour.* Melt the iron in a crucible caſting *ſulphur vivum* upon it; then caſt it into ſmall rods, and beat it into pieces; (for it will be very brittle:) then diſſolve it in *aqua fortis*, and evaporate the *menſtruum*, reducing the powder by a ſtrong fire into a body again, and it will be good *braſs*.

To ſoften IRON. Take *alum*, *ſal armoniac* and *tartar* of each like quantities; put them into good vinegar and ſet them on the fire; heat the Iron and quench it therein; or quench it 4 or 5 times in oil, in which melted lead has been put 6 or 7 times.

To keep IRON *from ruſting*, Rub the Iron over with *vinegar* mixed with *Ceruſe*, or with the marrow of a heart; if it be ruſty, oil of *tartar per deliquium*, and it will preſently take the ruſt away and cleanſe it.

To preſerve IRON-WORK *from ruſt, and other injuries of a corroding air, by an oily varniſh.* Take good *Venetian*, or for want of that, the beſt and cleareſt turpentine, diſſolve it in oil of turpentine, and add to it ſome linſeed-oil, made clear by long ſtanding in the hot ſun (for ſome uſes common drying linſeed-oil may ſerve) mix them well together, and with this mixture varniſh over any ſort of bright iron-work whatſoever.

It is a certain preſerver of all ſuch iron-work from ruſt, let it be what it will, provided it be ſuch as is not brought into common uſe; for much handling will wear it off, and heat will diſſolve it: but for all ſuch bright iron-work that is uſed about either carpenters or joiners work, that require not much handling; as alſo arms, *&c.* that hang up for ſtate, rather than preſent uſe, it is an infallible preſervative.

When you uſe this oily varniſh, 'tis beſt to warm it, and then with a bruſh lay it on as thin as poſſible; this is beſt for arms: but for other iron-work, it may be laid on cold; in four or five days after it has been laid on, it will be thoroughly dry.

Note, That ſuch arms as have been done over with it may when they come into uſe be cleanſed from it again, by being warmed hot before a fire; for heat will diſſolve it, but water will do it no hurt.

IRRESOLUTION is repreſented [in *Painting*, &c.] by an old woman ſitting; a black cloth wrapp'd about her head, in each hand a crow ſeeming to croak.

Sitting, becauſe knowing the difficulty of things, ſhe does not deliberate which is beſt; in old age, becauſe long experience makes men unreſolved; the crow ſeeming to croack out CRAS, CRAS, intimates mens putting off from day to day, when they ſhould diſpatch affairs in the preſent time; the black cloth denotes obſcurity in her intellect, making her to be in a quandary.

J. S. ſignifies *Juſtin Sadeler* ex. *John Saenreden* uſed the like mark, joining the J. to the S.

J. S. B. ſignified *John Sebald Beham.*

J. V. M. ſignified *Iſrael Van Mechelin* or *Mechelini*, or *Van Meck*, and of *Lomazzo* ſurnamed of *Mentz.* He lived before *Albert Durer*, and ſometimes marked his plates with the name *Iſrael* only.

JUDGMENT is repreſented [in *Painting*, &c.] by a naked man attempting to ſit upon a rainbow; holding a ſquare, a rule, compaſſes, and a pendulum in his hand.

The inſtruments denote diſcourſe, and the choice ingenuity ſhould make of methods to underſtand, and judge of any thing; for he judges not aright, who would meaſure every thing by one and the ſame manner. The rainbow indicates, that much experience teaches judgment, as the rainbow reſults from the appearance of divers colours, brought near one another by virtue of the ſun-beams.

JUST JUDGMENT is repreſented [in *Painting*, &c.] by a man in a long grave robe, with a human heart for a jewel engraved with the image of truth; he ſtands with his head inclined, and his eyes fixed on open law-books at his feet, which denotes integrity in a judge, who never ought to take his eyes off the juſtice of the laws, and contemplation of naked truth.

JULY, is repreſented [in *Painting*, &c.] in a garment of a light yellow colour, eating Cherries, with his face and boſom ſunburnt; on his head a garland of centaury and thyme, on his ſhoulder a ſcythe, with a bottle at his girdle, and carrying a lyon.

JUNE is repreſented in a mantle of dark graſs-green, upon his head a coronet of bents, king-cobs and maiden-hair, holding in his left hand an *angle*, in his right *Cancer*; and upon, his arm a basket of ſummer fruits.

JUNO, was repreſented [in *Painting*, &c.] by the ancients, by a woman of a middle age, holding a ſilver veſſel in one hand, and a ſharp ſpear in the other.

Homer repreſents her drawn in a chariot glittering with precious ſtones, the wheels of which were ebony, and the nails fine ſilver, mounted upon a ſeat of ſilver, and drawn with horſes, which were faſtened with chains of gold.

She is frequently painted with a ſceptre in her hand, to ſhew that ſhe hath the beſtowing of governments, authorities, and kingdoms.

Martianus repreſents her (ſitting in a chair under *Jupiter*) with a thin veil over her head, crowned with a coronet inchaſed and adorned with many precious jewels; her inward veſtment fine and glittering, over which hung down a mantle of a darkiſh colour, yet with a ſecret ſhining beauty; her ſhoes of an obſcure and ſable colour; in her right hand holding a thunderbolt; and in her other a loud noiſy cymbal.

Pauſanias tells us, that in a temple in *Corinth* her ſtatue (made of gold and ivory) was adorned with a glorious crown, on which was engraven the pictures of the *Graces*; ſhe holding in one hand a pomegranate and in the other a ſceptre, on the top of which was a cuckow; becauſe *Jupiter* when he became firſt enamoured with *Juno*, transformed himſelf into that bird.

The ſame author ſays, *That as to this ſtory*, (and others of the like kind) *tho' he did not believe ſuch things to be true, nor any others, that are ſo written of the Gods; yet that they are not altogether to be rejected, becauſe they contained myſteries, and carried in themſelves an inward meaning, which no doubt ſome might have explain'd, if the tyranny of fore-paſt times had not deſtroyed and obliterated the ſame.*

Tertullian writes, that in *Argos*, a city of *Greece*, the ſtatue of *Juno* was covered all over with boughs of a vine, and under her feet lay the skin of a lion, which intimated the hatred and diſdain ſhe bore towards *Bacchus* and *Hercules*, to whom, as the poets ſay, ſhe was ſtep-mother.

Some have repreſented her like a woman of a middle age, holding in one hand a poppy-flower or head; and a yoke, or pair of fetters lying at her feet.

By the yoke is ſignified the band of matrimony, and by the poppy fruitfulneſs; and hence ſhe is ſuppoſed to be the goddeſs of marriage.

She is alſo depicted with black hair and eyes, adorned with a sky-coloured mantle, wrought with gold and peacock's eyes, like the orient circles in the peacock's train.

IVORY, is the tooth or tusk of an elephant, which grows on each ſide of his trunk, in form of a horn.

Ivory is much eſteemed for its colour, its poliſh and the fineneſs of its grain when wrought.

The Ivory of the iſland of *Ceylon*, and that of the iſle of *Achem* have this Peculiarity, that they never become yellow, as that of the *Terra-firma* and *Eaſt-Indies* does.

Diaſcorides ſays, that by boiling *Ivory* for the ſpace of 6 hours with the root of *mandragoras*, it will become ſo ſoft and tractable, that it may be managed as one pleaſes.

BLACK IVORY, is only Ivory burnt, and drawn into a leaf when it is become black. It is ground with water, and made up into little cakes, or troches, and is uſed by the painters.

To ſoften IVORY *and* Bones. Lay it for 12 hours in *aqua fortis*, then 3 days in the juice of beets, and it will become tender, and you may work it into what form you pleaſe.

To harden it again, lay it in ſtrong vinegar.

To ſoften and whiten IVORY. Take white-wine vinegar thrice diſtilled, and decoct red-ſage leaves in it, with a little quick lime; put in the ivory while the liquor is boiling-hot, and it will ſoon become ſoft, and much whiter than it was before: this alſo takes yellow ſtains from Ivory.

To ſoften IVORY *a curious way.* Boil a good handful of ſage-leaves in thrice diſtilled vinegar, put in a little quick lime, and boil the *Ivory* in it, and it will grow ſoft and tough, and not break without difficulty, when it is worked in the fineſt comb-teeth, or other fine works

To whiten IVORY *that is turned yellow.* Beat a pound of quick-lime ſmall, and cover the Ivory with it; then gently, and by degrees pour vinegar upon it, and ſuffer it to lie for the ſpace of 24 hours, then take it out, and rub it with alum-powder, and it will reſtore its firſt whiteneſs: in the like manner you may order bones.

To take ſpots out of IVORY, *and whiten it.* Lay the *Ivory* in quick-lime, and pour firſt a ſprinkling of *vinegar*, and then water; but not too much, that the heat may not be too great, to make it ſcale or grow brittle; and when it has lain 24 hours, take it out, waſh it with white-wine, rub and poliſh it, and it will be extraordinary white.

To dye IVORY *white.* If *Ivory* be yellow, ſpotted or coloured, lay it in quick lime, and pour a little water over it, letting it lie for 24 hours, and it will be fair and white.

JUPITER is painted with long curled black hair, clad in a purple robe, trimm'd with gold, and ſitting on a golden throne, with bright yellow clouds diſpers'd about him.

Orpheus has deſcrib'd *Jupiter* with golden locks, with two golden horns peeping out of his temples, with bright ſhining eyes, with a large and fair breaſt, and wings on his ſhoulders.

By the *golden locks is ſignified the firmament, and its glorious army of tranſlucent ſtars; by his 2 horns the eaſt and weſt; by his eyes the ſun and moon; by his breaſt the ſpacious ambientneſs of the air; and by his wings the fury of the winds.*

Pauſanias ſays, that in the temple of *Minerva* (among the *Argives*) the ſtatue of *Jupiter* was made with 3 eyes, 2 of them in their right places, and the other in the middle of the forehead.

By which is ſignified his 3 kingdoms; the one heaven, the other the earth, and the laſt the ſea.

Plutarch relates, that in *Crete* he was repreſented wholly in human ſhape and proportion, but without ears.

By which was intimated that ſuperiors and judges ought not to be carried away by prejudice or perſuaſion, but to ſtand firm, ſtedfaſt, and upright to all without partiality.

On the contrary, the *Lacedemonians* repreſented him with 4 ears, *by which they intimated that God hears and underſtands all things; and that princes and judges ought to hear all informations before they deliver definitive ſentence or judgment.*

Porphyrius and *Suidas* repreſented the image of *Jupiter*, ſitting upon a firm and immoveable ſeat, his upper parts naked and unclothed, and his lower parts covered and inveſted; holding in his right hand a great eagle, join'd with the figure of *Victoria*, and in his left hand a ſceptre.

This

This image was erected in *Piræus*, a ſtately and magnificent gate of *Athens*.

By the ſeat is indicated the permanency of God's power; the naked parts denote, that the compaſſion of the divine power is always manifeſt to thoſe of an underſtanding ſpirit: the lower parts being covered, ſhew, that while we wallow in the world, and are, as it were, rock'd to ſleep with the illecebrous blandiſhments of it, that the divine knowledge is, as it were, hid and obſcur'd from us: by the eagle and Victoria *is intimated, that all things are in vaſſalage and ſubjection to the divine all-commanding power; and by the ſcepter, rule over all things.*

Martianus repreſents him with a regal crown, adorn'd with the moſt precious and glittering ſtones, having over his ſhoulders a thin white veil (made by *Pallas*'s own hands) in which were inſerted divers ſmall pieces of glaſs, repreſenting the moſt reſplendent ſtars; in his right hand he holds 2 balls; the one all gold, the other half gold, half ſilver: in the other hand an ivory harp with 9 ſtrings, ſitting on a foot cloth, wrought with ſtrange works, and peacocks feathers; and near his ſide lies a trident all gold emboſs'd maſs.

With the *Eleans*, a people of *Greece*, the ſtatue of *Jove* was compacted of gold and ivory, impaled with a coronet of olive leaves; holding in his right hand the image of *Victoria*; in his left a ſceptre, on the top of which was the pourtraiture of an eagle upon a ſeat of gold, enchas'd with the forms of many unknown birds and fiſhes, upheld and ſupported by 4 images of *Victoria*.

In *Caria* (a place of the leſſer *Aſia*) the ſtatue of *Jupiter* was made, holding in one of his hands a pole-ax.

Plutarch ſays, the reaſon of this was on account of *Hercules*, who overcoming *Hippolyta* the *Amazonian* queen, took it from her, and gave it to *Omphale* his wife, a *Lydian*.

The Platoniſts *underſtand by* Jupiter *the ſoul of the world; and that divine being, through whoſe almighty power every thing receives its being and formation.*

JUSTICE is repreſented [in *Painting*, &c.] by a fair young virgin, drawing after her, with her left hand, a black hard ill-favoured woman, haling her by main force, and ſtriking her over the face in a ſevere manner.

The young virgin is *Juſtice*, the other *Injuria*, i. e. *wrong* or *injuſtice*; ſhe is drawn young and a virgin, to ſhew that judges and adminiſtrators of law, ought to be incorrupt and free from bribes, partiality, or flattery; but juſt, conſtant, and ſincere.

JUSTICE is alſo repreſented [in *Painting*, &c.] by a virgin clothed all in white, blinded; in her right hand ſhe holds the

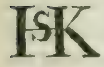
Roman Faſces, with an ax in it, in her left hand a flame, and an oſtrich by her ſide.

The white ſhews that ſhe ſhould be ſpotleſs, void of paſſion, without reſpect to perſons, as being hood-winked declares; the *Faſces* denote whipping for ſmall offences, and the ax cutting off the head for heinous ones; the oſtrich ſignifies that things ſhould be ruminated upon, how hard ſoever they be, for that digeſts hard iron.

DIVINE JUSTICE is repreſented [in *Painting*, &c.] by a handſome woman, with a golden crown on her head, with rays above, her hair looſe about her, a naked ſword in her right hand, in the left the balance, the globe of the world at her feet.

The crown and globe ſhew their power over the world, the balance ſhews juſtice, the ſword the puniſhment of malefactors.

K.



HANS KALDUNG us'd this mark; as alſo did *Luke van Cranogio*.

KALI, a Plant, alſo call'd GLASS-WORT; it grows in the ſands on the ſea-ſhore, where it is ſown by the neighbouring Inhabitants, in order to burn it green.

Of the aſhes of *Kali* is made ſoap, glaſs, alkali, ſalt, *&c.* this plant grows in great abundance in *Egypt* and *Syria*; the name of *Kali* was given it by the *Arabs*.

It is likewiſe found pretty plentifully in *Languedoc*, their manner of preparing it is as follows;

When the plant is grown to its pitch, they cut it down, and let it dry; afterwards they burn and calcine it in certain pits, like kilns, dug in the ground for that purpoſe, which are cloſe covered up with earth, ſo that no air may come at the fire.

The matter by this means is not only reduced to aſhes, but made into a very hard ſtone, like rock-ſalt, which they are forc'd to break with hammers to get it out; and this matter is call'd by the *French Salicor*, or *Soude en Pierre*.

There are ſuch quantities of it made here, that it is exported into ſeveral other countries; but principally into *Italy*, where it is by the *Venetians* manufactured into thoſe beautiful glaſſes, which are afterwards ſent into ſeveral parts of *Europe*.

But yet the *ſalicor* made in *Languedoc*, is inferior to that brought from *Alicant*.

The beſt is in little dry, ſonorous ſtones, of a bluiſh grey colour, and full of little eyes and holes.

The goodneſs of this herb is according to the places of growth it is taken from; that which grows on the coaſts and banks of *Syria*, *Ægypt*, the *Levant*, &c. is the beſt; that which grows on the coaſts of *Spain*, *Italy*, and *Venice*, is the next beſt; that which grows on the coaſt of *France* is worſe than the former; but that which grows about the mouth of the river *Thames*, and other maritime places of *England*, is of little or no worth at all.

Of this *Kali* there are ſeveral ſorts which are good for nothing; but fly away in ſmoak, one of which is the *Kali ſpinoſum*, which is not at all fit for this purpoſe.

KEEPING [in *Painting*] a term us'd to ſignify the ſubordination of all the other parts of a picture to the one principal figure, from whence the examination of the parts muſt be begun, and to which it muſt be return'd in the determination of the whole picture.

WILLIAM DE KEISAR was a very neat landskip-painter, after the manner of *Elſheimer*; he was perfectly of the *Dutch* Goût, minding little particulars more than the whole together. He wrought ſometimes with Mr. *Loten* the landskip-painter; he imitated various manners, and drew ſome ſorts of cattle and birds very well; he alſo painted tombs and various ſorts of ſtone-work in imitation of *Vergoſoon*. He was not unskilful in painting architecture and flowers; he died in *London* about 42 years ago.

KERMES is a kind of husk or excreſcence, as it is generally thought, about the bigneſs of a Juniper-berry, round, ſmooth, and ſhining, of a beautiful red, and full of a mucilaginous juice of the ſame colour.

The name is purely *Arabick*, for in that country theſe berries grow on a ſmall tree or ſhrub; and from that their native ſoil were tranſplanted into *Spain*, *Provence*, and *Languedoc*, where they now are plentiful.

It is found ſticking to the leaves and bark of a kind of *ilex* or holm-oak, in *Spain*, *Languedoc*, and other hot countries.

It has a vinous ſmell, a bitter but agreeable taſte; and its liquor contains an infinite number of little round or oval eggs.

The origin of the *Kermes* is ſuppos'd to be owing to a little worm, which pricking the holm-oak, to draw its nouriſhment from it, raiſes a little tumour or veſſel, which fills with juice, and as it ripens becomes red.

When the *Kermes* is dried, there comes out of it an infinite number of little inſects and flies, ſo ſmall, that they are ſcarce diſcernible; inſomuch that the whole inward ſubſtance ſeems converted into them.

For this reaſon it is ſometimes call'd *vermilion*, (unleſs perhaps it be ſo call'd from its beautiful vermilion colour.)

To prevent that inconvenience, they uſually ſteep the *Kermes* in vinegar before they dry it.

The manner of preparing it for dying is as follows:

The grain being taken when ripe, it is ſpread on linnen: and at firſt, when it abounds moſt in moiſture, it is turned 2 or 3 times a day, to prevent its heating, till ſuch time as there appears a red powder among it; then it is ſeparated by being paſſed through a ſearce, and afterwards the grain is ſpread abroad on linnen, till the ſame redneſs of powder is perceived, and then the ſifting is repeated again; and thus they proceed while they diſcover a red powder on the ſurface of the grain, which is ſtill paſſed through the ſearce till it will yield no more.

In the beginning, when the ſmall red grains are ſeen to move, as they will do, they are ſprinkled over with ſtrong vinegar and rubbed between the hands.

Were not this precaution taken, out of every grain would be formed a little fly, which would skip and fly about for a day or two, and at laſt, changing its colour, would fall down dead.

The grain being quite emptied of its pulp or red powder, is waſhed in wine, and then expoſed to the ſun; after this, 'tis put up in ſmall bags, putting along with it the proportion of red duſt that the grain had afforded.

According to M. *Marſilli*'s experiments made at *Montpellier*, the grain of *Kermes* has the effect of galls, when mixed with vitriol, and makes a good ink.

Mix'd with oil of *tartar* or lime-water, its colour turns from a *vermilion* to a *crimſon* colour.

In a decoction of turnſol-flowers it retains its proper colour.

To extract ſcarlet colour from Berries of KERMIES, *for making a fine* LAKE.

Several ways may be given for extracting the tincture of theſe grains for making *Lake*; but I ſhall only mention two; the firſt is indifferent tedious; but is very excellent, and produces a tincture whereby is made a moſt admirable fine *lake*.

The way of making the *Lake* in *France* is very modern, and it is but of late they have had the ſecret in *Paris*, which was brought from *Venice*.

Take a gallon of fair-water, and 4 pound of wheaten bran, 2 drams of oriental *Piraſter*, and as much *Fenugreek*; ſet all in a kettle over a fire, till the water is milk-warm; keep your hand in it until you can bear the heat no longer; then take it off, and cover it with a cloth that the heat may continue the longer; let it ſtand for 24 hours, then run off the *lixivium*, and keep it for the following purpoſe.

Put 3 quarts of fair water to half the *lixivium* into a clean earthen veſſel; ſet it on the fire, and make it boil, which when it begins to do, put in an ounce of the grain pounded to an im-

impalpable powder, in a braſs mortar, and ſearced; then having pounded a little crude *tartar*, to take off the remaining part of the grains on the bottom and ſides of your mortar, and ſo put it in with the grains; when the water begins to boil again, take it off in an inſtant, and ſet it by to cool.

This done, and the water cold, take the ſhearings of ſcarlet woollen-drapery, and let them ſtain therein for about half an hour: afterwards ſqueeze it into another earthen pot by expreſſion; and after you have thus drawn off all the tincture, put the ſhearings into the laſt pot; ſtirring them about very well with a ſmall ſtick, that they may ſtain the ſooner. Boil all for about half an hour over a gentle fire, or elſe the tincture will become black; then take out the ſhearings, and put them well ting'd into a veſſel of cold water: about half an hour after pour off the water gently, and ſo put freſh on again; then preſs and ſpread them to dry in a clean place, where no duſt can come at them.

When you have done this, make the following *lixivium.*

Lay *Vine-aſhes* ſtalks in a hempen cloth doubled, or aſhes of willow, or ſome other lighter wood; pour on them by degrees cold water, letting it ſtrain through into a veſſel ſet underneath; pour it again on the Aſhes, and when it is all run through, ſet it by to ſettle for 24 hours, that the aſhes which is carried off, may fall to the bottom. When you have done this, pour the *lixivium* by degrees into another veſſel, having warm'd it.

When it begins to be cold, ſet it over a gentle fire, and let it boil, and it will become red; take a little of the ſhearings, preſs them well, and if it remain without colour, take off the kettle immediately; for the *lixivium* has extracted it entirely.

Then ſpread a linnen cloth over a free-ſtone bowl, ſet the ſhearings therein, and pour on the *lixivium* by little and little, to ſtrain and yield the tincture, then ſqueeze the cloth and ſhearings therein, to preſs out all the colour that remained in them; throw away the cloth; waſh the ſhearings, clean and keep them for the like uſe another time.

Then put 12 ounces of *roch-alum* well powdered into a glaſs body full of cold water, letting it be quite diſſolved; when this has been perfectly done, ſpread a linnen cloth over 2 ſtaves, and ſet a large free-ſtone veſſel underneath; put all the alum-water into the bottle of tincture, and ſtrain it afterwards through this cloth: the *lixivium* will go thro' it clear, and leave the colour behind; but if it ſhould not be coloured; 'tis only ſtraining it through again, and you'll have done.

Now to get the tincture, you muſt mix all that remains in the cloth, and gather it together, ſpreading it afterwards over new-made tiles (which have not been allowed time to moiſten) on the pieces of linnen, and then mold them into troches to dry ſuddenly, without mouldying, which would ſpoil them.

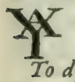
Therefore great care muſt be taken that the tiles be not at all moiſt; and if they are, to change them, that it may dry the ſooner, and thus you will have a Lake of an admirable colour for painting: you muſt leſſen or improve the colour as you find occaſion by a greater or leſſer quantity of *roch-alum.*

A readier way to extract the tincture of KERMES *Berries.*

Tho' the *Menſtruum* given above, made with ſhearings of ſcarlet cloth, be a very good one for this purpoſe, yet the following is a more eaſy one, and as effectual:

Take ſtrong-water of the firſt run or diſtilling, and put it into a long-necked glaſs body; diſſolve in it a pound of *roch-alum*, adding an ounce of *Kermes Berries* finely powdered and ſearced; let it digeſt well, ſhaking the matraſs from time to time, and the ſtrong-waters will draw to them all the tincture of the *Kermes*, and be very finely coloured; then let all ſettle for 4 days, and afterwards pour it gently into a glazed earthen veſſel.

Diſſolve 4 ounces of *roch-alum* in running-water, and pour this into the ſtrong-waters, or tincture of *Kermes* to cauſe a ſeparation: filter it through a linnen-cloth, and the ſtrong-waters will fall through white, leaving the tincture behind. If they be any thing coloured, ſtrain them again and again, till they be clear: take up the *lake* or colour with a wooden ſpoon, and make it into troches; drying them as directed for the former. Thus you may have a quantity of this colour, or *lake*, as fine and as good as the former.



LUKE KILIAN put this mark on a nativity copied from *Parmegiano.*

To dye SILK *a* KING'S *colour.* Put a ſufficient quantity of water into a clean kettle or copper, and to every pound of ſilk take 12 ounces of *madder*, and the ſame quantity of galls; boil the ſilk with them for an hour, then take them out, let them be a little browned, and then dried.

ANNE KILLIGREW, was a young gentlewoman, daughter of Dr. *Killigrew*, maſter of the *Savoy*, one of the prebendaries of *Weſtminſter.* She painted ſeveral hiſtories, alſo portraits, for her diverſion, exceedingly well, as likewiſe ſome pieces of ſtilll life. Mr. *Becket* did her picture in *mezzo-tinto* after her own painting. She was alſo a poeteſs, and wrote a book of poems which were printed: She lived unmarried, and died young, about the year 1688.

JOHN ZACHARY KNELLER was born at *Lubeck*, and brother to Sir *Godfrey Kneller.* He travelled to *Italy*, and when he came to *England* painted ſeveral portraits in ſmall, very neat;

he did alſo ſeveral pieces in ſtill life. At laſt he took to water-colours, and copied divers of his brother's portraits in miniature with good ſucceſs. He died in *Covent-Garden* about 1704, and lies buried in that church.

Sir GODFREY KNELLER, born in the year 1646, lived at *London*, excelled in portraits, died in the year 1723, aged 77 years.

L.

LACCA, is a kind of gum, or rather wax, hard, red, brittle, clear and tranſparent, brought from *Malabar*, *Bengal*, and *Pegu*, and uſed in dying ſcarlet, *&c.*

Authors are not agreed as to the production of this curious wax.

F. *Tachard*, who was upon the ſpot, ſays, that a kind of little ants, fixing themſelves to the branches of ſeveral trees, leave behind them a reddiſh moiſture, which lying expoſed to the ſun and wind, hardens in 5 or 6 days time.

Some again are of opinion, that this is not the production of the ants, but a juice which they draw out of the tree, by making little inciſions in it; and indeed the trees where the *Lacca* is found do yield a gum; but then 'tis of a nature very different from the *Lacca*.

The ants are as it were a kind of bees, and the *Lacca* is their *honey*: they work at it 8 months in the year, and the reſt of the time they lie by, becauſe of the rains.

The Method of preparing the *Lacca* is as follows: the firſt thing they do, is to ſeparate it from the branches, to which it adheres; pound it in a mortar, and throw it into boiling water, and when the water is well dyed, they pour on freſh, till ſuch time that it will tinge no more.

Then this water is ſet in the ſun to evaporate, and afterwards the liquid tincture is ſtrained through a cloth.

This gum being examined by M. *Geoffroy*, appeared to be a kind of Comb, ſuch as bees and ſome other inſects are accuſtomed to make. Upon breaking it into pieces, it appeared divided into a great number of little cells of an uniform figure, and which plainly ſhew that it never ouz'd from trees: theſe cells are not mere excrements, as ſome take them to be, but are deſtined for ſomething to be depoſited in them, and accordingly are found to contain little bodies, which thoſe Perſons who obſerved it firſt took for the wings, or other parts of inſects which produced the *Lacca*.

Theſe little bodies are of a beautiful red; and when broke make a powder as fine as cochineal.

It is moſt probable that theſe cells are deſigned for the lodging of the young brood in, as thoſe of bees; and that theſe ittle carcaſſes are the embryo's of the inſects, or perhaps their kins. This before mentioned is the natural *Lacca*.

There are ſeveral ſorts of ***Lacca***, or ***Lake***, or ***Laque***; beſides which there are ſeveral Lakes uſed by painters which go by theſe names, and are called artificial lakes; being coloured ſubſtances drawn from ſeveral flowers. See the article LAKE.

To clean ſilver or gold LACE. Lay the Lace ſmooth on a fine woollen carpet, and bruſh it free from duſt; then burn ***roch-alum***, and powder it very fine, and afterwards ſift it through a lawn ſieve, then rub it over the Lace with a fine bruſh, and in doing it will take off the tarniſh, and reſtore it to its brightneſs, if it be not too much worn on the threads.

LACES, POINT, *&c.* [to paint in ***miniature***] lay on firſt a mixture of ***blue***, ***black***, and white, as for linens; then heighten the pattern, flowers or flouriſhes with white only; then ſhade and finiſh with the firſt colour.

When they are upon fleſh, or any thing elſe which you would have to be ſeen through them; finiſh what is under them, as if you intended to lay nothing on them, and lay on the Lace or point with pure *white*, and finiſh with the other mixture.

To make the common LACKER *varniſh*. Take rectified ſpirits of wine 2 pound, *ſhell-lac* in powder half a pound, put them into a two-quart bottle, and let them ſtand till the *lac* is quite diſſolved; then ſtrain it, and add a little common *ſanguis draconis* in fine powder, and a little ***turmerick*** in fine powder, both tied up in a rag; digeſt them for a day or two, ſhaking it often, and it is done.

Where take notice, *That you may heighten or diminiſh the colour by increaſing or diminiſhing the quantity of the colouring Ingredients.*

Another LACKER. Take rectified ſpirits of wine 2 pound, *ſhell-lac* half a pound: let it be diſſolved, and then ſtrain it; then, inſtead of common *ſanguis draconis*, take a very little drop of fine *ſanguis draconis* in fine powder, and *Engliſh Saffron* dried, which tie up in a fine linnen rag, and put into the varniſh, as before.

If you would have the colour deeper, or more like copper, add more *ſanguis draconis*; but if lighter, the more *Saffron.*

A LACKER *varniſh to be uſed without fire.* Take of the following varniſh (in the next ſection) 2 pounds, *Venice turpentine* an ounce or 2 ounces; mix and diſſolve it well with the varniſh.

With this you may lacker or varniſh any thing in the open air, which, altho' it may look dull and cloudy juſt after varniſhing, *yet will that quickly vaniſh, and it will obtain in a ſhort time a pleaſing and goodly luſtre.*

To make the beſt ſort of LACKER *varniſh now uſed by gilders.* Take fine *ſeed-lac varniſh* (which ſee under the article VARNISH] 6 ounces, with which mix *arnotto* in fine powder a ſufficient quantity; ſet it over the fire in a gally-pot, and let it diſſolve, and keep it in a bottle cloſe ſtopped.

2. Take fine ſeed-lac varniſh 6 ounces, as much *gamboge* in powder as it will diſſolve in a gentle ſand-heat; keep this alſo in a glaſs cloſe ſtopped for uſe.

3. Take *ſeed-lac varniſh* one pound, and add to it 2 ſpoonfuls and a half, or 3 ſpoonfuls of the firſt reſerved tincture, and 5 or 6 ſpoonfuls of the ſecond reſerved varniſh tincture; and add to this 15 grains of ſaffron tied up in a rag: digeſt them for 24 hours, having firſt ſhaken them well.

4. Then make a trial of this varniſh upon a bit of ſilver; if you find it too yellow, put in more of the *arnotto*, or firſt reſerved varniſh tincture: thus increaſing or diminiſhing the preparation, till you have brought it to the exact golden colour, which is the ultimate or only thing aimed at.

To LACKER *oil-painting, ſized works, or burniſhed ſilver.* Warm your picture-frame or piece of work before the fire; then having put out ſome lacker into a large gallipot, with a fine large and faſt bruſh of hog's-hair, or camel's-hair, nimbly paſs your work over, and be ſure that you do not miſs any part of it, nor yet waſh the ſame part twice; but take ſpecial care to lay it thin, and even, and preſently warm it by the fire while it looks bright; for by ſo doing you may lacker it again in a quarter of an hour, warming it before and after the operation.

Repeat this twice or thrice, and if you find the colour not deep enough, do it again the fourth time; but take care of making it too deep; for that is a fault cannot be mended.

To make LACKERING *look like burniſh'd gold.* If you have before-hand burniſhed your ſilver very well, and your lacker is tinged of a true gold-colour, and you lay it on carefully with an even hand, not thicker in one place than another, matting it as you do burniſhed gold, it will be ſo exactly like gold-foil, or gilding, that it will be able to deceive the moſt curious eye, that ſhall not be before-hand acquainted with the fallacy.

Here you are to obſerve, That in lackering carved works, you muſt be quick, or ſtrike and job your bruſh againſt the hollow parts of it, to cover them alſo, matting and varniſhing them deeper, and more dull than other parts of the frame and pieces; and this deepening is done with the lacker-varniſh, (or with arnotto it ſelf) which being well mixed with the ſame, all the deep and hollow places and veins of the work are to be touched and deepened with it; by which means the colour is accompliſhed, and the reflection of a perfect glory.

To LACKER *in oil ſuch things as are expoſed to the weather.* 1. The ſame method is to be obſerved here, as in the former, excepting in this, that your *priming* ought to be *whiter* than the laſt, which is effected by mixing a little *white-lead* which has been ground a long time, with the former gold ſize.

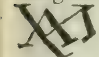
2. Alſo your ſilver ſize ought not to be ſo dry as that of gold, when the leaves are laid on.

To gild carv'd-work in oil, which is not to be expoſed to the open air. Melt ſome ſize, and put in juſt ſo much *whiting* as will make it of a white colour; do the frame over once with this ſize.

2. Then add more *whiting* to the ſize, till it is of a proper thickneſs; and do it over 3 or 4 times, or more, with this, according as you find the work does require, letting it dry thoroughly between each time.

3. When this is thoroughly dry, rub and ſmooth the work all over with a piece of fiſh-skin or *Dutch-Ruſhes*, and afterwards *water-plane* it, with a fine rag, dipp'd in water; rubbing it gently till it is very ſmooth, and then ſet it by to dry; and then *ſize* it with ſtrong ſize.

4. Let it ſtand till it is dry, then lacker over the work twice by a gentle heat, and lay on your gold ſize, and perform every thing as before directed for laying on leaf-gold.


JEAN LADESPELDRICKT *invenit*, is the mark on a dead *Chriſt*; and the ſame mark is found on other pieces.

PETER VAN LAER, *called* BAMBOCCIO, born in 1584, ſtudied in *France*, and at *Rome*, lived at *Haerlem* and *Amſterdam*, excelled in Hiſtory, Landſcapes and Grotto's, died in the year 1644, aged 60 years.

LAKE, comes next after CRIMSON, and is good for ſhadeing and heightening *Carmine*. But you muſt take notice of this, that in laying of carmine upon a print, you muſt touch your lights only with a very thin teint of it, that can ſcarcely be diſcerned; and lay it on ſtrong, juſt upon that part of the light which enters upon the ſhade; and afterwards lay ſome lake on the ſtronger part of the ſhade.

Lake is to be had ready prepared in ſhells for water-colours, and is ſold in ſome *colour-ſhops*.

To make a fine LAKE. Take half a pound of good *Brazil*, boil it in three pints of lye, made of the aſhes of vine-ſprigs, till it be half evaporated, then let it ſettle, and ſtrain it off.

Then boil it again with freſh *Brazil* a quarter of a pound, of *Cochineal* 2 pounds, and *terra merita* half an ounce; adding to it a pint of fair water; let it boil till it be half evaporated, as before; then ſet it by to ſettle, and ſtrain it. But when you take it off the fire, put in half an ounce of burnt-*alum* reduced to an impalpable powder; let it diſſolve, ſtirring it with a ſtick, and add to it a quarter of a dram of arſenick.

In order to give it a body, reduce 2 cuttle-fiſh bones to a fine powder, and put in the powder, and leave it to dry up at leiſure, and then grind it with a good quantity of fair-water, in which leave it to ſteep; and afterwards ſtrain it through a cloth, and make it up into ſmall tablets or cakes, and ſet it to dry on a card or paſte-board.

If you would have this *lake* redder, add to it *lemon*-juice, and if you would have it deeper, add to it *oil of tartar*.

Another LAKE. Boil ſhavings or ſhearings of ſcarlet in a lye of the aſhes of *burnt tartar*, or oil of *tartar*; this lye having the quality of ſeparating the *ſcarlet*; when it has boil'd enough, take it off, and add to it *cochineal*, *maſtick* in powder, and a little *roch-alum*; then boil them again all together, and while it is hot, ſtrain it 2 or 3 times through a jelly-bag; the firſt time ſqueezing the bag from top to bottom with 2 ſticks, then take out what remains behind in the bag, and waſh it well; then paſs the liquor you expreſs'd with the ſticks through the bag again, and you will find a paſte ſticking to the ſides of the bag, which you may either ſpread out upon a paſte-board, or divide into ſmall parcels upon paper, and ſet it by to dry.

To make Columbine LAKE. Steep half a pound of the fineſt *Braſil* wood of *Fernambouc*, raſp'd in 3 pints of the moſt ſubtilly diſtill'd *vinegar*, for at leaſt a month; and if it be for 6 weeks, it will be the better. After which, boil all in *balneo mariæ*, 3 or 4 wabbles up, and leave it for a day or two; after which, put a quarter part of *alum* powder into a very clean earthen pan, and ſtrain the liquor upon it through a cloth, and ſo let it remain for a day; then heat the whole 'till it ſimmers, and leaving it again for 24 hours, reduce 2 cuttle fiſh-bones into powder, and having warm'd the liquor, pour it in upon them; then keep ſtirring the whole with a ſtick 'till it is cool, and leave it again for 24 hours before you ſtrain it. Remember that it muſt be firſt ſtrained upon the *alum*, before it is poured upon the cuttle-fiſh bone.

The marc or dregs of COLUMBINE LAKE. To make a fine *purple* colour, beſides the *carmine* for oil and diſtemper, take the marc or dregs of the *columbine lake*, which ſubſides with the *cuttle-fiſh bone*, and dry it and grind it; and there will be no fine *Lake* ſo ſplendid: and if it be mixt with *Lake*, there will be an addition made to its body.

Major-General LAMBERT was a great encourager of painting, and a good performer himſelf in flowers, as was, or is yet to be ſeen in the Duke of *Leeds*'s houſe at *Wimbleton*. It is probable he might have learn'd this art, or at leaſt have been furthered in it by *Baptiſt Gaſpars*, whom he receiv'd into his ſervice at his coming into *England* in the time of the Civil Wars. His eldeſt Son *John Lambert*, Eſq; alſo painted faces for his diverſion very well, many of whoſe pictures are ſtill to be ſeen; this laſt gentleman died about 30 years ago, at his eſtate in *Yorkſhire*.

PROSPER HENRICUS LANCRINCK was a *German*, born in the year 1628, is ſuppos'd to have learnt his art at *Antwerp*, was a *Landſkip-painter*; copied after *Titian* and *Salvator Roſa*. He came into *England*; and Sir *Edward Sprag*, that noble ſea-commander, became his patron; was employed by Sir *Peter Lely* in painting the grounds, landſkips, flowers, ornaments, and ſometimes the draperies of thoſe pictures he intended to gain eſteem by. He alſo practiſed drawing by the life, and ſucceeded well in ſmall figures. He died at a middle age in the year 1692.

LANDSKIP }
LANDSCAPE } The view or proſpect of a country, extended as far as the eye will reach.
LANDSCHAPE } *Landſkips* in painting are pieces repreſenting ſome campaign or rural ſubject, as hills, valleys, rivers, country-houſes, *&c.* where human figures are only introduc'd as accidents and circumſtances.

This is eſteem'd one of the loweſt branches of painting.

LANDSKIP is what expreſſes in lines the perfect viſion of the earth, and all things that are upon it; which are ſituate, or placed above the horizon, as towns, villages, caſtles, promontories, mountains, rocks, valleys, ruins, rivers, woods, foreſts, chaſes, trees, houſes, and all other buildings, both beautiful and ruinous.

2. In the firſt place always expreſs a fair horizon, ſhewing the heavens cloudy or clear, more or leſs according to the occaſion; and if you expreſs the ſun, let it be either as riſing or ſetting, and as it were behind or over ſome hill or mountain.

The moon and ſtars are ſeldom or never depicted, unleſs it be in repreſentations of twilights, becauſe all things are ſuppos'd to be ſeen by day.

3. If you do expreſs the ſun, make his light to reflect upon all the trees, hills, mountains, rocks, or buildings, ſhading the contrary ſide; after which manner alſo ſhadow clouds, miſts, and the like, making the ſhadows to fall all one way.

4. Take great care to augment or leſſen every thing proportionably to their diſtance from the eye, making them either bigger or leſſer.

5. In expreſſing things at large diſtances, as 10, 20, or 30 miles off, where the object is hard to be diſcerned; as whether it be temple, caſtle, houſe, or the like; ſhew no particular ſigns thereof, or any eminent diſtinction, but rather, as weakly, faintly and confuſedly, as the eye judges of it.

6. If *Landskips* be laid in colours, the farther you go, the more you muſt lighten it with a thin and airy blue, to make it ſeem, as if it were afar off, beginning at firſt with a dark green, ſo driving it by degrees into a blue, according to the diſtance.

7. Make your *Landskip* to ſhoot (as it were) one part lower than another, making the neareſt place or hill higheſt, and thoſe that are farther off to ſhoot away under that, that the *Landskip* may appear to be taken from the top of an hill.

8. Let every thing have its proper motion, as in *trees* when they are ſhaken with the wind, making the ſmaller boughs yielding, the ſtiffer leſs bending; in *clouds*, that they follow the winds, in rivers the general current, and flaſhing of the waters againſt the boat-ſides.

9. *In the ſea*, the waves and other proper agitations, the rolling of the billows, the tumbling of veſſels up and down, the ſhips floating, ſome dipt, ſome half-drown'd, ſome ſtanding almoſt an end, ſome hid almoſt with the waves, by means of the uncertainty of the ſurges, others endeavouring to live.

10. In the motion of waters falling from an high place, but eſpecially when they fall upon rocks and ſtones, you muſt repreſent it leaping up into the air; and ſprinkling all about: laſtly, let *every thing* that moves, whether eſſentially or accidentally, have its proper repreſentation.

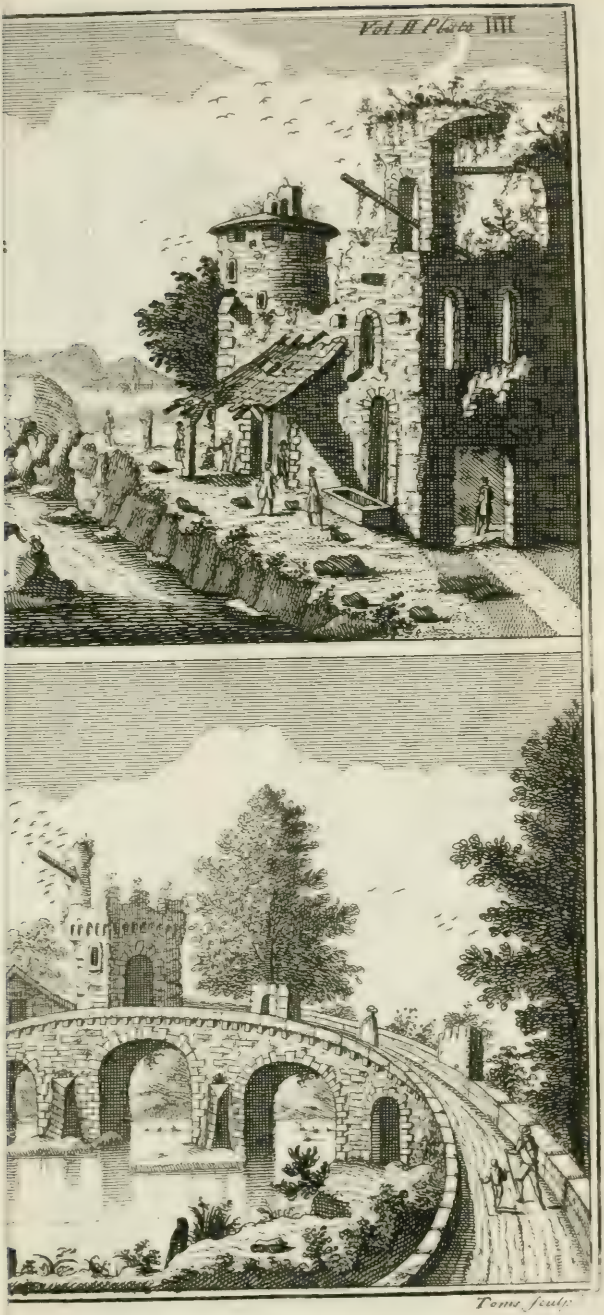
11. Let the work imitate the ſeaſon it is intended to repreſent; as if you intend it for a winter-piece, repreſent felling of woods, ſliding upon the ice, fowling by night, hunting of bears or foxes in the ſnow, making the trees every where naked or laden with ſnow or a hoar froſt; the earth bare, without greenneſs, flowers, or cattle; the air thick or heavy; the water frozen, with carts paſſing over it, and boys playing upon it, *&c.*

12. *Laſtly*, let every ſite have its proper *parerga*, adjuncts or additional graces, as the farm-houſe, wind-mill, water-mill, woods, flocks of ſheep, herds of cattle, pilgrims, ruins of temples, caſtles, and monuments, with a thouſand ſuch other things only proper to particular ſubjects.

LANDSKIP. If painting (ſays Monſ. *de Piles*) be a ſort of creation, 'tis more ſenſibly ſo in *Landskips* than in any other kind of pictures.

We ſee there nature riſing out of her *Chaos*, the elements ſeparated, the earth adorn'd with her various productions, and the heavens with their ſtars.

Vol. II Plate IIII



Toms sculp.

Vol. II Plate IIII

Toms sculp

This ſort of Painting contains all the other in little, and therefore the painter who exerciſes it ought to have an univerſal knowledge of the parts of this art; if not in ſo particular a manner as thoſe that are uſed to hiſtory, yet at leaſt ſpeculatively and in general; and if he does not finiſh all the objects that compoſe his picture, or accompany his *Landskip*, he is obliged to ſpecify livelily the *guſto*, and the characters; and by how much the leſs his piece is unfiniſhed, to give it the more vivacity.

However, ſays he, I do not pretend to exclude exactneſs of work from this talent; on the contrary, it will be the more admired, and the more valuable for it.

But let a Landskip be never ſo well finiſhed, if its merit does not conſiſt in the compariſon of the objects one with another, and if their character be not thereby preſerved, if the proſpects are not well choſen, or not well ſet off with a good intelligence of the *claro obſcuro*; if the ſtrokes are not lively, and the ſcene animated by the figures, by animals or other objects, which are uſually in motion; and if to a good guſto of colouring, and to extraordinary ſenſations, the genuineneſs and truth of nature are not joined, the picture will never be eſteemed, nor be admitted into the cabinets of the true criticks.

Of LIMNING LANDSKIP, *more particularly to make the tablet for Landskip.* Take a piece of vellum, and ſhave it thin upon a frame: faſten it with paſte or glew, paſte it upon a board; theſe ſort of tablets are altogether uſed in *Italy* for *Landskip* and *Hiſtory.*

2. If you take your Landskip from the life, take your ſtation on a riſing ground on the top of an hill, where you will have a large horizon, and mark your tablet into 3 diviſions downwards from the top to the bottom.

3. Place your face directly oppoſite to the midſt of the *finitor*, keeping your body fixed, and draw what is directly before your eyes, upon the middle diviſion of the tablet; then turn your head (but not your body) to the right hand, and delineate what you view there, adding this to the former; alſo do the like by what is to be ſeen on your left-hand, and your Landskip will be completed.

4. Lay down every thing exact, not only in reſpect to diſtance, proportion and colour; but in form too: as, if there be *hills*, *dales*, *rocks*, *mountains*, *ruins*, *cataracts*, *aqueducts*, *cities*, *towns*, *caſtles*, *fortifications*, or whatſoever elſe may preſent itſelf to view, always making a fair sky to be ſeen afar off, and letting the light always deſcend from the left to the right.

5. When you firſt begin your work, begin with a large sk and if there be any reflection or ſhining of the ſun, be ſu that you do not mix any red-lead in the purple of the sky the clouds; but only with *lake* and *white*; work the yellow ar whitiſh beams of the ſun with maſticote and white.

6. Then finiſh the blueiſh sky and clouds with a clean pe cil; and *ſmalt* only at the firſt operation; dead all the wo over with colours ſuitable to the air, green meadows, trees ar ground; laying them ſomewhat ſmooth, but not over curiouſl but ſlightly and haſtily.

7. Make a fair, large sky, and work it down to the horiz faintly, but very fair; and drawing nearer to the earth; let t far diſtant mountains appear ſweet and miſty, almoſt undiſti guiſhable, joining with the clouds, and as it were loſt in t air.

8. The next ground-colour downwards muſt increaſe magnitude of reaſon as nearer the eyes, ſomewhat blueiſh, or a ſea-green: but drawing towards the firſt ground, let the decline into a reddiſh or poppinjay-green.

9. The laſt ground-colour muſt be neareſt to the colour the earth, *viz.* a dark yellow, brown and green; with whic or ſome other colour near it, you muſt make your firſt trees.

10. Making them to increaſe proportionably in colour ar magnitude, as they come near in diſtance, and that with go judgment; the leaves flowing, and falling in one with anothe ſome apparent, and others loſt in the ſhadow.

11. Let the Landskip lie low, and as it were, under the ey (which is the moſt graceful and natural) with a large and fu sky, not riſing high, and lifting it ſelf up into the top of t piece.

12. Take care to make your ſhadows to fall all one wa *viz.* to make light againſt darkneſs, and darkneſs againſt ligh by that means extending the proſpect, and making it ſeem tho' it were a great way off, by loſing its force and vigor, by i remoteneſs from the eye.

13. In touching the trees, boughs, and branches, put all t dark ſhadows firſt, raiſing the lighter leaves above the dark by adding *maſticote* to the *dark green*, which may be made wi *bice*, *pink*, and *indigo*.

14. The uppermoſt of all, which are expreſſed laſt of a by lightly touching the outmoſt edges of ſome of the form leaves, with a little *green*, *maſticote*, and *white*; the dark ſhadows may be ſet off with *ſap-green* and *indigo*.

15. You muſt endeavour to expreſs trees and their leav rivers and mountains far diſtant, with a certain real ſoftneſs ar delicateneſs.

16 To repreſent cataracts, great water-falls, and rocks, there nuſt firſt a full ground be laid near the colour, and then a tronger in dark places, and a ſlight heightening in the light.

17. Take notice of all diſproportions, cracks, ruptures, and 'arious repreſentations of infinitely differing matters; the manier of which is abundantly expreſſed in almoſt every Landkip.

Cavalier GIO LANFRANCO, born in the year 1581, cholar to the *Carraches*, and a *zealous imitator* of *Raphael Correggio*, lived at *Rome*, *Parma*, *Naples*, excelled in hiſtory, and lied in the year 1647, aged 66 years.

Mr. LANIER was a painter well ſkilled in the *Italian* hands. He was employed by King *Charles* I. beyond-ſea to purchaſe hat collection made by him, to whom he was cloſet-keeper.

LAPIS LAZULI, a mineral ſtone of a blue colour. *Pliny* nd *Dioſcorides* reckon it a ſand; *Agricola*, a mineral found in he veins of the earth; but in reality it is a mere ſtone, called by way of excellence *Lapis*, or *Lapis Lazuli*.

When this ſtone is perfect, it is ſtudded with little ſpecks, or tars of gold; and to be good, it ſhould be able to reſiſt the ire and ſmoak, and to come out of them with new luſtre.

It is found in mines of *gold*, *ſilver*, and *copper*, and alſo n pits of marble; which laſt is that now generally in uſe.

Lapis Lazuli is diſtinguiſhed into 3 kinds: the firſt is called *ld rock*, which is pure, ſmooth, a fine blue, with beautiful ellow ſtreaks, like veins of gold, which yet are frequently no more than veins of *pyrites*.

The ſecond, which is called the *new rock*, and is ſtuffed with ommon ſtones; its colour is weaker, and its price lower: Theſe two kinds come to us from *Perſia* and *Siam*.

The third kind is brought from the mountains of *Auvergne* n *France*. This kind is mixed with the common rock whence t is dug, is of a pale blue, and ſprinkled with greeniſh ſpots, with veins of *pyrites*.

This, when ſufficiently charged with ſpots of green, is ſold or the *Armenian* ſtone.

LARK-SPUR, *or* HEEL, is of ſeveral colours, and ſtriped; he moſt common are *purple*, *gridelin*, and *red*, which you may know how to do by the directions for other flowers of the ame colour.

LATTEN, is a mixed or compounded metal made of plates of *copper*, put into crucibles, and covered with the powder of *Calamine*, or a kind of half-mineral ſulphur ſtrewed over it, nd upon that the powder of beaten-glaſs; to which fire being put, and the greateſt force of it kept in, alters the colour of the copper to a braſſy quality, and adds in weight 8 pounds to the hundred.

LAUGHTER [in *Painting*,&c.] In this Paſſion all the parts of the face go one way; for the eye-brows being drawn down towards the middle of the forehead, cauſes the mouth, noſe, and eyes to follow them in the ſame motion.

This paſſion of Laughter ſucceeds Joy, and the motions of it are expreſſed by the eye-brows raiſed about the middle, and drawn down next the noſe; the eyes almoſt ſhut; the mouth appears open, and ſhews the teeth; the corners of the mouth being drawn back, and raiſed up, will make a wrinkle in the cheeks, which will appear puffed up, and almoſt hiding the eyes: the face will be red, the noſtrils open, and the eyes may ſeem wet, or drop with tears, which being very different from thoſe of ſorrow, make no alteration in the face; but very much when excited by grief.

To CAST LAUREL-*Branches*, FLOWERS, VINE-*leaves*, &c. In order to do this, make a circle of earth like a box, to the bigneſs of the thing you intend to caſt, and take for your imitation ſuch *leaves*, *branches*, *flowers*, *&c.* as are of a good ſubſtance; for if they be too thin, they will not run without difficulty.

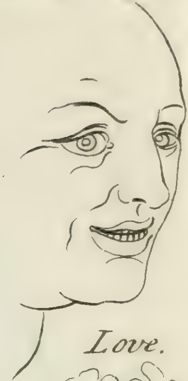
Then run a needle with a thread at the end of the ſtalk of the flower or leaf, and ſo through the middle of it, faſtening the one end of the thread to the bottom of the circle, and the other to a ſtick that is to ſupport it, over-againſt it in a perpendicular-line, that the flower or leaf touch not the ſides of the circle: but before you faſten either, put a little piece of wax at the end of the ſtalk for a *git-hole*, which muſt touch the bottom where the thread was faſtened.

Having done this, caſt a compoſition of plaiſter of brick and plume with ſal-armoniack water, and when it is well mixed, very fine and dry, bake it till the flower be wholly conſumed which it encompaſſes, and has taken the impreſſion off; and being almoſt cold, run into it tin, ſilver, or other metal. If *tin*, you may put a third part *lead*; or if *ſilver*, a little *copper*, and you will find the leaves or flowers very curiouſly taken in the metal; take them out by little and little, breaking off the mould; and after this manner you may caſt all reptiles and creeping things.

MARCELLUS LAURON, *or* LAROON, was born at the *Hague* in 1653, and brought up under his father, who brought him very young into *England*. He was a general painter, and imitated other maſters hands very well. He painted well both in great and little, and was an exact draughtſman, but was chiefly famous for drapery, wherein he excelled moſt of his contem-

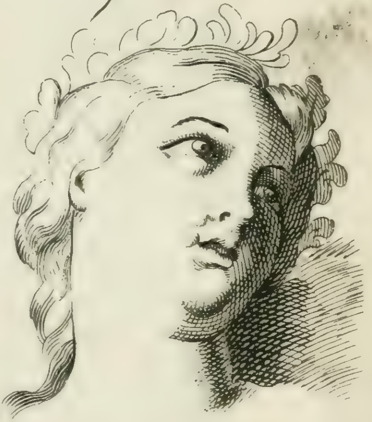
r

Laughter

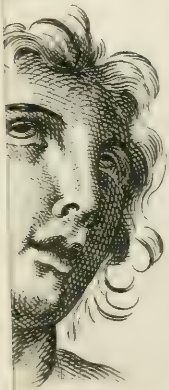


ove.

Love.



ture.



Extream bodily pain.

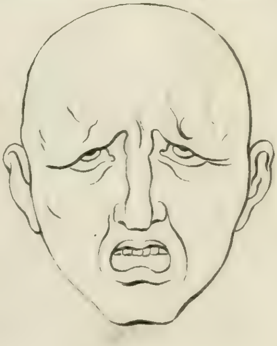
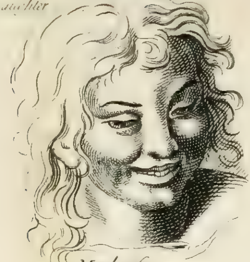
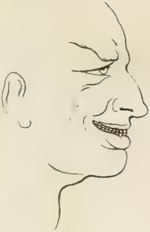


Plate V Vol. II

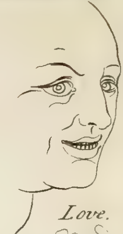
Laughter



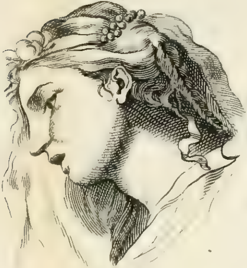
Laughter



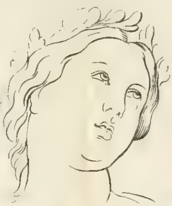
Laughter



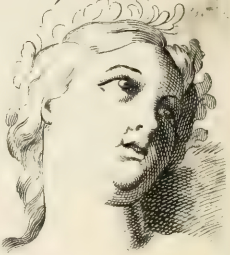
Meekneſs.



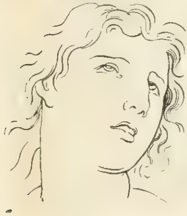
Love.



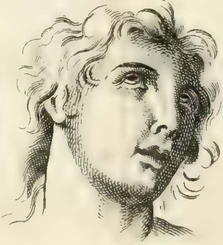
Love.



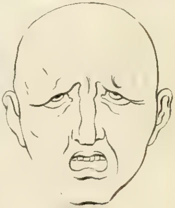
Rapture.



Rapture.



Extream bodily pain.



contemporaries. He was likewiſe famous for pictures in little, commonly called converſation-pieces. He died and was buried at *Richmond* in *Surrey*, aged 52 years.

LAW is repreſented [in *Painting*, &c.] clothed in purple robes, ſeeded with golden ſtars; and a mantle of carnation, fring'd with gold, purple, and yellow buskins.

L. C. *Ciu. F.* with the firſt C in the perpendicular ſtroke of the L, is the mark of *Ludovico Cardi*, ſirnam'd *Civoli*, a *Florentine* painter, in a plate of the ſupper of the Phariſee.

L. C. F. B.
LOD. C. I. Fr. Bri. } ſignifies *Lewis Caracci* inventor. *Franceſco Briccio intaglio*, or ingraved.

L. C.
L. V. C. } ſignifies *Luke van Cranogio*, or *Luke van Craen*, painter in *Savoy*, *anno* 1509.

L. C.
L. O. C. } ſignifies *Lewis Caracci* in his 3 plates, engrav'd with his own hands.

L. D. in a ſacrifice, and *Alexander* the Great by Abbot *Primaticcio.*

LEAD is a coarſe, heavy, impure metal, of all others the ſofteſt and moſt fuſible, when it has been purified.

By making an analyſis of it, it is found to contain a little *mercury*, ſome *ſulphur*, and a great deal of bituminous earth.

Lead is found in various countries, but abounds particularly in *England*.

'Tis found too, in ſeveral kinds of ſoils, and ſtones, ſome of which beſides contain gold, ſome ſilver, others tin, *&c.*

It is melted on a furnace, provided for the purpoſe, with a ſtrong coal fire upon it; as it melts, it runs through a canal on one ſide of it, leaving the earth, ſtone, and ſcoria, with the aſhes of the coals.

It is purified by skimming it before it is cold, and by throwing ſuet and other fat bodies into it.

Lead is found of a lighter or deeper colour, according as it is more or leſs purified, tho' ſome make a difference in the colour of the ore, always eſteeming that beſt which is the whiteſt.

Lead is a metal of much uſe; it eaſily melts and mixes with *gold*, *ſilver*, and *copper*, and (as ſome ſay) communicates its humidity to them; but not being able to endure the violence of the fire, which they ſuſtain, it retires or evaporates, and carries with it all that is heterogeneous in them; ſo that neither gold nor ſilver are refin'd without *Lead*. And the coarſer kinds of precious ſtones, boiled in *Lead*, are thereby rendred the more brilliant.

When the *Lead*-ore is dug out of the mine, it is beaten ſmall, and waſh'd clean in a running ſtream, and ſifted in iron rudders.

The hearth or furnace, whereon it is melted, is made of clay or fire-ſtone; this is ſet into the ground, and the fire is built on it, and is lighted with charcoal, continued with oaken gads, blown with bellows by mens treading on them.

After the fire being kindled, and the fire-hearth is grown hot, the *Lead*-ore is thrown on the wood, which melts down into the furnace, and then with an iron ladle they take it out, and upon ſand caſt it into what form they pleaſe.

The miners ſometimes find the vein run up into the roots of trees, and yet don't obſerve any difference between them and other trees.

When the mine lies near the ſurface of the ground, the graſs is ſometimes found yellow.

The ore runs ſometimes in a vein, ſometimes diſpers'd in banks; it lies many times between rocks; ſome of it is harder, others ſofter; ſometimes they have branch'd ore in the ſpar; about the ore is ſpar and chalk, and another ſubſtance, which the miners call *Crootes*.

It has been obſerv'd by Mr. *Glanvil*, that the ſmoke of the *Lead-works* in *Somerſetſhire* is a great annoyance, and affects both the workmen and the cattle that graze near them with a diſeaſe, that often proves mortal.

That the trees that grow near them have their tops burnt, and their leaves and outſides diſcoloured and ſcorch'd.

There are various preparations of *Lead*, ſerving for various uſes; as

Lead-duſt is a preparation us'd by potters, made by throwing charcoal-duſt on melted *Lead*, and ſtirring them a long time together; to ſeparate the coal again, they only waſh it in water, and dry it afreſh; the uſe of it is to give a varniſh and gloſs to their works.

White Lead us'd by painters is only thin plates of *Lead*, diſſolv'd by the fumes of boiling vinegar.

Maſticotes of ſeveral colours, and the *ſandix* are alſo preparations of *Lead*.

Red Lead is a preparation of mineral *Lead* calcin'd, us'd by painters, potters, *&c.*

Litharge of gold or ſilver is only the *Lead* that has been us'd in purifying copper.

Black-Lead is a kind of mineral ſtone, of a black colour, but ſilvered and ſhining, found in *Lead* mines, and appears to be nothing elſe but *Lead*, not yet arrived at maturity, much us'd as crayons or pencils for *deſigning*.

This is melted like the common *Lead*.

To purge LEAD. Melt it in the fire, then quench it in the ſharpeſt *vinegar*; melt it again, and quench it in the juice of *celandine*; melt it again, and quench it in *ſalt-water*; then in *vinegar* mix'd with *ſal-armoniac*; and *laſtly*, melt it, and put it into aſhes, and it will be well cleanſed.

To tinge LEAD *of a gold Colour.* Take of purg'd *Lead* one pound, *ſal-armoniac* in powder 1 ounce, *ſalt-petre* half an ounce, *ſal-ellebrot* 2 drachms, put all into a crucible, ſet it in a furnace for 2 days, then add to it ſulphur of *ſol*, and it will be thoroughly ting'd.

To make LEAD *of a golden colour.* Put an ounce of quick-ſilver into a crucible, ſet it over the fire 'till it is hot, then add to it of the beſt leaf-gold 1 ounce, and take it from the fire, and mingle it with purified *Lead* melted one pound; mingle all well together with an iron rod, to which put of the filtrated ſolution of vitriol in fair water 1 ounce, then let it cool, and it will be of a gold colour; diſſolve the vitriol in its equal weight of water.

The way of making Glaſs of Lead, commonly called Vitrum Saturni*: to calcine Lead, and extract from it the colours of emerald, topaz, ſea-green, or azure granate, ſapphire, gold, and other colours.*

Glaſs of Lead known to few artiſts in this way, becauſe they make no uſe of it by reaſon of its brittleneſs, is beyond doubt the faireſt and nobleſt glaſs of any other.

In this glaſs you may imitate all the colours of oriental precious ſtones; and if this glaſs was as tough as cryſtal, it would far ſurpaſs it in beauty.

It is true, if you don't work it with great care, no pots or crucibles will hold it, for it will crack them and run out.

I will here give all the methods of preparing it; and that ſo diſtinctly, that the unexperienced may ſucceed in it.

The buſineſs principally conſiſts in knowing well how to calcine the lead, and re-calcine it again, which is commonly known, notwithſtanding it ſhall be ſhewn how to do it, for the ſake of thoſe that do not know it.

The better the lead is calcined, the leſs apt it is to turn into lead again, and break the pots in its operation.

We will alſo ſhew, that you muſt alway drop the glaſs into water when it is melted, for the leaſt lead remaining in it, breaks out the bottom of the veſſels, and ſo uſe your matter, which may be avoided, by carefully minding what we have, and which we ſhall note again in the following articles.

It is highly probable, that that ſubtilty, whereby the lead ſo eaſily in this caſe pierces the pots, when it is not wholly calcined, comes from a certain unctuous yellow matter like oil, that is ſeen to ſwim on the top ſometimes in a violent fuſion

For it has often been obſerved, that if that unctuous matter be not taken off, as ſoon as it appears on the top, it will pierce the pot, and ſo all run out among the coals.

To calcine LEAD. *Lead* is eaſy to be calcined, becauſe it is ſo to melt; for this purpoſe you make uſe of a furnace or a kiln, you muſt put in a good quantity of *lead* at a time; for in 2 or 3 days may be calcined ſeveral hundred weight.

The fire ought to be hot enough to melt glaſs, and not hotter; for if it be hotter, it will not calcine the *lead.*

As ſoon as the *lead* is melted, and it yields on top a yellowiſh matter, begin to draw forward the calcined part with an iron, fit for the purpoſe, always ſpreading it in the internal extremity of the furnaces, or kiln's bottom.

This *lead* being well-calcined for the firſt time, ought to be put in again into the furnace moderately hot to reverberate; you muſt ſpread it with the iron, and ſtir it continually for ſeveral hours, and at this ſecond calcination it will become yellow; then ſearce it through a fine ſieve, and that which does not go through, muſt be put with other *lead* to calcine afreſh; always taking care that the furnace have juſt a moderate heat, and be not too hot.

The way to make glaſs of LEAD. The beauty of this glaſs is, that it may be tinged of ſeveral colours, as black, white, green, and red, which are natural to it, the degrees of the fire only making it take thoſe different colours.

This glaſs being well made, communicates its beauty to glaſs, and to tinctures of precious ſtones, wherein it is employed.

To make *vitrum ſaturni*, take 15 pound of calcined *lead*, and 12 pound of *cryſtal* or *rochetta* frit, according to what colour you would have; mix them well together, put them in a pot in the furnace, where 10 hours afterwards it will be in good fuſion; then caſt the whole into water, and take out ſpeedily the remaining *lead* at bottom of the veſſel, for fear it ſhould break; then take it out of the water, and dry and put it into the ſame pot to melt again: Take care not to put in the grains of *lead* (if there be any) which were in the water, and which will be looſened from the matter.

After your matter has been again in fuſion 6 hours, you may work it.

You may alſo make a glaſs of *lead*, by taking 3 parts of *lead*, and one of fine ſand, and change them into glaſs in the furnace, as alſo of 3 parts of calcined *litharge*, and one part of calcined *flint*, melted and vitrified in the furnace together.

The way how to work Glaſs of Lead.

It is not enough to ſhew how to make glaſs of *lead*, if we don't ſhew how to work it too.

If any one would make a veſſel for uſe, of any figure, he muſt take a glaſs-worker's iron they uſe to take metal out of the pots with, and take what quantity of glaſs of *lead* with it he pleaſes, when it is in fuſion: let it a little cool, then work it after the manner uſed by glaſs-workers.

You muſt clean well the marble you make uſe of, and while the glaſs is cooling, you muſt wet the marble with cold water, for otherwiſe the glaſs would ſcale it, and part of the marble would ſtick to it.

If the marble be hard, you have ſo much the leſs to fear, for it will not break ſo eaſily, nor ſtick to the glaſs.

To make glaſs of Lead a fair emerald colour.

The eaſineſs of tinging glaſs of *lead* of any colours is the reaſon you may be ſure of giving it an excellent emerald-green, eſpecially becauſe green is natural to it.

Take 20 pound of *cryſtal* frit, powdered and ſearced, and 16 pound of *calx of lead* alſo ſifted; mix them well together, then put them little by little into a pot heated in the furnace, and 8 or 10 hours afterwards it will be melted, then caſt the melted matter into water, and carefully take the remaining *lead* from it, then putting the matter after it is dried in the ſame pot again, 7 or 8 hours after it will be again melted.

Reiterate this proceſs, caſting the melted matter into water, and ſeparating the *lead* that ſticks to the pot, as before; then this glaſs will be cleanſed and purified from all the foulneſs and unctuoſity the calx and powder would leave in it, and be very reſplendent.

You muſt put it again in the pot, where it will melt and putrify in little time.

When it is melted, put to it 6 ounces of ſcales of copper thrice calcined to powder, with 24 grains of *crocus martis*, made with vinegar alſo in powder, and mix them together.

This powder muſt be caſt in at 6 times, always mixing well the glaſs, and taking at each time the interval of ſaying the creed. Let it reſt one hour, and then ſtir it again, and ſee if the colour pleaſes you; if it be as you would have it, let it ſtand 8 hours, that the whole may well incorporate.

Then ſtir it well, and let it reſt a little, that the *fæces* may precipitate to the bottom of the pot, tho' it may be wrought, and the colour can ſcarce be diſtinguiſhed from a true emerald.

Another way of making Glaſs of Lead of a fairer emerald than the former.

For this colour which will be fairer than the precedent, you muſt change your ingredients, and inſtead of ſcales of copper thrice calcined, put the ſame doſe of *caput mortuum*, of *vitri-*

olum veneris prepared, then proceed exactly as in the former article, and you will have a very exquiſite green.

To make a Glaſs of Lead the colour of Topaz.

Topaz is a lighter colour than emerald, and caſts rays the colour of gold; wherefore the colour cannot be well imitated except this way.

Take 15 pound of *cryſtal* frit in powder, and 10 pound of *calx of lead* alſo in powder, mix them well, and ſearce them very fine; then put them in a pot heated at the furnace, where leave it 8 hours, that it may be melted.

Then caſt the matter into water, and take out of the pot all the *lead* (if there be any) that remains.

Put the matter again in the pot to be melted, and caſt it by intervals into the water; and to that matter half its weight of glaſs tinged of a golden colour, incorporate well, and purify the whole together, and you'll have a glaſs of the colour of oriental *Topaz* fit to be wrought.

To make a sky or ſea-green in glaſs of Lead;

As is ſhewn in ſeveral places elſewhere, to tinge glaſs of a sky-colour or ſea-green, this would be needleſs to repeat here.

That we now ſhew, which is made in *glaſs of lead*, has no leſs beauty.

Take 16 pound of *cryſtal* frit, 10 pound of *calx of lead*, mix them together, and put them gently into a pot heated in the furnace, where they will be in good fuſion in 12 hours time, then caſt the matter into water, as has been ſhewn before, take the remaining *lead* out of the pot, and put your matter to melt again 8 hours, after caſt it into water again, taking the remaining *lead* out of the pot, then it will be well purified.

Put it again in, to melt in the ſame pot, and when it is in good fuſion, caſt in at different times 4 ounces of ſmall copper-leaves prepared (*ſee article* Copper, *&c.*) and a quarter of an ounce of *zaffer* prepared, (*ſee the article* Zaffer, *&c.*)

After having mixt theſe powders well together, and the matter at each caſting of it in; 2 hours after ſtir the matter well in the pot with an iron rod, and make an aſſay to ſee if the colour be full enough, then let it ſtand 10 hours to purify, and to give the colour time to incorporate with the glaſs, then it may be wrought to the uſes you deſign it, ſtirring it well, and letting it reſt a little to ſettle before you work it.

To make a ſapphire colour in Glaſs of Lead.

The beauty of ſapphire is no leſs imitable in *glaſs of lead*, than the colours of other precious ſtones; and its clear blue tranſparent colour will have as much ſplendour.

To make it, mix together 15 pound of *cryſtal* frit in powder, and 12 pound of *calx of lead*, then ſearce it, pounding again what does not paſs through the ſieve; add to that 2 grains of prepared *zaffer*, 24 grains of *manganeſe* of *Piedmont* alſo well prepared, mix the whole well together, put it in a pot heated in a furnace, and let it ſtand to melt during the ſpace of 12 hours; then caſt the vitrified matter into water, and carefully take away the *lead* that remains in the pot; then put the matter again into the ſame pot, and let it ſtand to be re-purified 12 hours.

Then ſee if the colour pleaſes you, and you may work it; you'll have a colour like the true oriental ſapphire.

The way to make a golden colour in Glaſs of Lead.

This colour is as fine in *glaſs of lead* as cryſtal, it takes that colour both from the *lead* and the ingredients mixt with it.

Take 16 ounces of good *cryſtal*, frit in powder, to which add the ſame weight of *calx of lead* alſo in powder, and well ſearced; then add 6 ounces of copper ſcales thrice calcined, and 48 grains of *crocus martis* made with *vinegar*, the whole mixed well together, put it into a pot heated in the furnace, 12 hours after caſt the glaſs in water, and take the remaining *lead* out of the pot, and then put the matter again into the ſame pot to be well purified during 12 other hours.

After that ſtir it well, and ſee if the colour pleaſes you; if it chance to be greeniſh, add to it ſome *crocus martis*, and the greenneſs will vaniſh, then you'll have a golden colour very fine, which may be wrought.

Theſe be all the colours that are given to *glaſs of lead* alone; we ſhall augment the number in a paſte of *lead*, (*whereof you will find the preparation in the articles* Paſte *in letter* P) becauſe it is uſeful for imitating precious ſtones.

How to PRINT *the* LEAF *of any* TREE *or* PLANT.

Rub the veins on the back ſide of the *leaf* of any plant you deſire, with a dog's tooth, or piece of ivory, to bruiſe them a little, then rub it over gently with a piece of woollen, dipt ſlightly in linſeed oil; then lay the oil'd ſide of the *leaf* on a piece of white paper, and preſs it equally on every part, and a perfect impreſſion of it will remain on the paper; which (if you pleaſe) you may afterwards colour of its natural colour.

Another way of taking a natural impreſſion of the LEAVES *of* PLANTS, *ſo that it ſhall appear as black as if done in a printing-preſs.*

Take any *leaf*, let it be thoroughly dry, and with a printer's ball, ſuch as they uſe for laying on the ink upon letters, it being equally covered with printer's ink; and ſtrike it gently 4 or 5 times over the back of the *leaf*, 'till all the veins have been black'd with the ink; then lay your *leaf* on a trencher or ſmall board with the backſide upwards; then lay over the *leaf* a piece of white paper, wetted a little, ſo as to be but a ſmall matter more than moiſt, and upon this paper lay a ſmooth trencher, and preſs it hard down, but not ſo hard as to break the fine fibres of the *leaf*; and this will give you a fine impreſſion.

But this would be done the more eaſily, if you had a wooden roller made like a *cylinder*, of about a foot in length, and an inch and half diameter, the middle part of which is covered to the length of 7 or 8 inches with woollen-cloth, roll'd hard and even 2 or 3 times about it.

The white paper that covers the *leaf* being roll'd 4 or 5 times backwards and forwards with this roller, will give you a very curious impreſſion.

The neceſſaries requiſite for this operation are a gallipot of printer's ink, a couple of ſmall balls ſuch as printers uſe, for laying the ink equally on the *leaf*, and the roller before-mentioned. But if you cannot conveniently procure printer's ink, (which is not eaſily to be had in the country) then you may uſe the following method.

Another way. Rub the back of the *leaf* with *linſeed-oil burnt*, and then ſtrew ſome powder of *black-lead*, or (if you have not that,) *charcoal* or *ſmall-coal duſt*, very finely ground and ſearced, or the powder of *burnt cork*, very equally, upon a ſmooth board, that will juſt cover it; then ſtroke it over ſmoothly with the blade of a knife, and clap it upon the board, the back of the *leaf* having been oil'd, and then lay your white paper on the black'd ſide of the *leaf*, and either preſs it, or roll it as before.

But if you have not the conveniency of any of theſe Ingredients, you may uſe *vermilion*, and mixing this to the conſiſtence of printer's ink, cover your printing-balls with that, and dab them on the back of the *leaf*, and ſo take off your impreſſion as before directed.

N. B. *The reaſon why the back of the leaf, is the ſide proper to take impreſſion from, is, becauſe the ribs or veſſels riſe on that ſide higher than the fleſhy part of it; and therefore they being coloured with any of theſe inks, will give an impreſſion; but in the front foreſide of the leaf, the fleſhy parts riſe, and theſe fine fibres are ſunk below them.*

Take notice that where vermilion is us'd, blue bice may be us'd either with butter or with oil as follows.

A fine red or blue printer's ink for making impreſſions of this ſort.

Take either *vermilion* or *blue bice*, and grind them with burnt *linſeed oil*, and uſe it as you would do the other printing ink; the *blue* ſeems to be the moſt preferable of the two, becauſe if you would colour the *leaf*, the *blue* would be a colour agreeable to the green ſorts.

A method of taking off the impreſſion of the LEAVES *of* PLANTS *in* Plaiſter of Paris, *ſo that they may be afterwards* *caſt in any* METAL. Thoſe perſons who practiſe caſting in metal have frequent occaſion to uſe the Leaves of Plants for the embelliſhment of their works, which are generally made models done by the hand; which require much time, and, after all, are ſometimes very deficient as to perfection: but the following is much eaſier.

Lay the leaf you would have the impreſſion of between the leaves of a book, till it will lie flat; then fix the fore-ſide or front of the leaf to a ſmooth board with ſtrong gum-Arabick water; after this has been done, raiſe a little wall of coarſe paſte about it, to the height of about half an inch; or you may ſurround your board with *paſte-board*, or *card-paper*, ſo cloſe, that it will contain a liquid for ſome time. Then oil the back of the leaf, and pour on water and *plaiſter of Paris*, which when dry will have taken an exact impreſſion of every vein of the leaf, and from which you may eaſily make a mould to caſt in, as you pleaſe.

To preſerve the LEAVES of TULIPS. Make up ſome card-paper into the form of dripping-pans, and fix the *Tulip-leaves*, to the cards with ſtrong gum-*Arabick* water; then pour on gently ſome of the iſing-glaſs, prepared in ſpirits, warm, till the leaf is quite covered, and in the ſpace of an hour or two the liquor will become hard, and all the colours will be preſerved in beauty for ſeveral years, if the flower be preſerved from the air, by a glaſs, *&c*

You may do the ſame by the leaves of *Auricula's*.

LEAGUE, is repreſented [in *Painting*, &c.] by two women with helmets embracing one another, holding ſpears in their hands, on which are a heron and a crow.

Their being armed and embracing, denote their conduct to help one another with their arms; the birds, enemies to the fox, at their feet, which they unanimouſly aſſault, as being enemies to them both.

LEARNING, is repreſented [in *Painting*, &c.] by a mature lady ſitting with her arms open, as if ſhe would embrace another, having a ſceptre in one hand, on which is a ſun, a book open in her lap, and from a ſerene sky falls abundance of dew.

Her age ſhews, that Learning is not acquired but by long ſtudy. The open book and extended arms, that Learning is very communicative; the ſceptre and ſun, the dominion it has over the darkneſs of ignorance; the dew, that Learning makes tender youth fruitful.

LEATHER, a matter too well known to need any deſcription.

To colour WHITE LEATHER *the beſt way.* Hang the skins in chalk or lime-water, till they are grown ſupple, that the hair or wool may be ſtripped off, ſtretch them on tenters, or by the means of lines, and ſmooth them over: then bruſh them over with alum-water, very warm, and colour them with the colour you would have them, and dry them in the ſun, or in ſome warm houſe, and they will be uſeful on ſundry occaſions, without any farther trouble.

To colour BLACK LEATHER *the* German *way.* Take of the bark of elder 2 pounds, of the filings or ruſt of iron the ſame quantity; put them into 2 gallons of rain-water, and ſtop them up cloſe in a cask or veſſel, and let them ſtand for the ſpace of 2 months: then put to the liquid part a pound of nut-galls, beaten to powder, and a quarter of a pound of *copperas*, heating them over the fire, and ſuffering them to ſtand 24 hours after, and then uſe the liquor with a bruſh till the skin has taken a fine black.

To colour LEATHER *a fair* RED. Firſt rub the Leather well in alum-water, or alum it; boil ſtale urine, ſcum it, till half of it is waſted: then put in an ounce of the fineſt lake, the like quantity of *Brazil* in powder, one ounce of *alum*, and half an ounce of ſal-armoniack; mix them well, and keep them ſtirring over a gentle fire about 2 hours, and ſo uſe the liquid part to colour or tinge the skin.

To colour LEATHER *of a curious* French YELLOW. Take one part of Chalk, and another of wood-aſhes, and make of them a good lye; then ſtrain out the fine liquor, and ſet it in a veſſel over the fire, and put into it *turmerick* in powder, and a little ſaffron; and let it ſimmer till it becomes pretty thick; then ſet it a cooling, to be uſed as occaſion requires.

To make white LEATHER BLUE. Take a quart of *elder-berries*, ſtrain out the juice, and boil it with an ounce of powder of *alum*, and half an ounce of *indigo*, or *ſmalt-blue*, and bruſh over the leather with a fine bruſh dipped in it 3 times, ſuffering it to dry between whiles, and the buſineſs will be effected.

To colour Spaniſh LEATHER, *&c.* Take that which the *Dutch* call *Pomplemelch*, warm it, and rub the leather with it; then take of *Venice tot appelen*, and having pounded it ſmall, put a quantity of water to it, and let it ſoften over a gentle fire; then preſs out the water, and rub or waſh out the skin in it; repeating the ſame ſeveral times, and after that, take the fineſt ſhoe-makers *black*, and rub the skin over with it, having in the melting added a little *vitriol* or *copperas*, and letting it dry, take *gooſe* or *hog's* greaſe, and with a woollen cloth rub the skin over for a good while, where there is a good fire to ſupple it, and afterwards rub it over with your hands, till it diſappear; or inſtead of greaſe, you may uſe *linſeed* or *train-oil*, and ſo in caſe of any other colour, according to the colours you deſign.

Dying LEATHER.

To dye SKINS *of a* REDDISH *colour.* Firſt waſh the skins in water, and wring them well out, and afterwards wet them with a ſolution of *tartar* and *bay-ſalt* in fair water, and wring them out again: then to the former diſſolution add aſhes of *crab-ſhells*, and rub the skins very well with this: after this, waſh them in common water, and wring them out; then waſh them with tincture of *madder* in the ſolution of *tartar* and *alum* and the *crab-ſhell aſhes*; and if they prove not red enough after all, waſh them with the tincture of *Brazil.*

Another way. Firſt waſh the skins, and then lay them in galls for 2 hours, wring them out, and dip them in a tincture made of *liguſtrum*, *alum*, and *verdegreaſe* in water; and in the laſt place, dye them twice in *Brazil* boiled in lye.

To dye Skins of a pure YELLOW. Take of fine aloes two ounces, of linſeed-oil 4 pounds; diſſolve or melt them, then ſtrain the liquor, and beſmear the skins with it, and being dry, varniſh them over.

Another. Infuſe *woad* in *vinegar*, in which boil a little *alum*: or thus; having dyed them green, as directed, then dye them in a decoction of *privet berries*, *ſaffron* and *alum*-water.

To dye Skins of an ORANGE. Boil *fuſtick-berries* in *alum*-water: but for a deep orange, uſe *turmerick*-root.

To dye them BLUE. Boil *elder-berries*, or *dwarf-elder* in water, then ſmear or waſh the skins with it; wring them out; then boil the berries as before in a diſſolution of alum-water, and wet the skins in the ſame water once or twice, dry them, and they will be very *blue*.

Another BLUE. Take the beſt *indigo*, and ſteep it in urine a day; then boil it with *alum*, and it will be good. Or temper the *indigo* with red-wine, and waſh the skins with it.

To dye Skins of a pure sky-colour. For each skin take *indigo* one ounce, put it into boiling water, let it ſtand one night, then warm it a little, and with a bruſh pencil beſmear the skin twice over.

To dye them PURPLE. Diſſolve *rock-alum* in warm water, wet the skins with it, dry them; then boil raſped *Brazil* well in water; let it ſtand to cool: do this 3 times, and afterwards rub the dye over the skins with your hand, and when they are dry, poliſh them.

To dye Skins GREEN. Take ſap-green and alum-water, of each a ſufficient quantity; mix and boil them a little: if you would have the colour darker, add a little *indigo*.

Another ſad GREEN. Take *filings* of iron and *ſal Armoniack*, of each a like quantity, ſteep them in urine till they be ſoft; ſtretch out the skin, and beſmear it with this; dry it in the ſhade, and the colour will penetrate, and be green on both ſides.

To GILD LEATHER. Take glair of the whites of eggs, or gum-water, and with a bruſh rub over the Leather with either of them, and then lay on the gold or ſilver; let them be dry, and burniſh them.

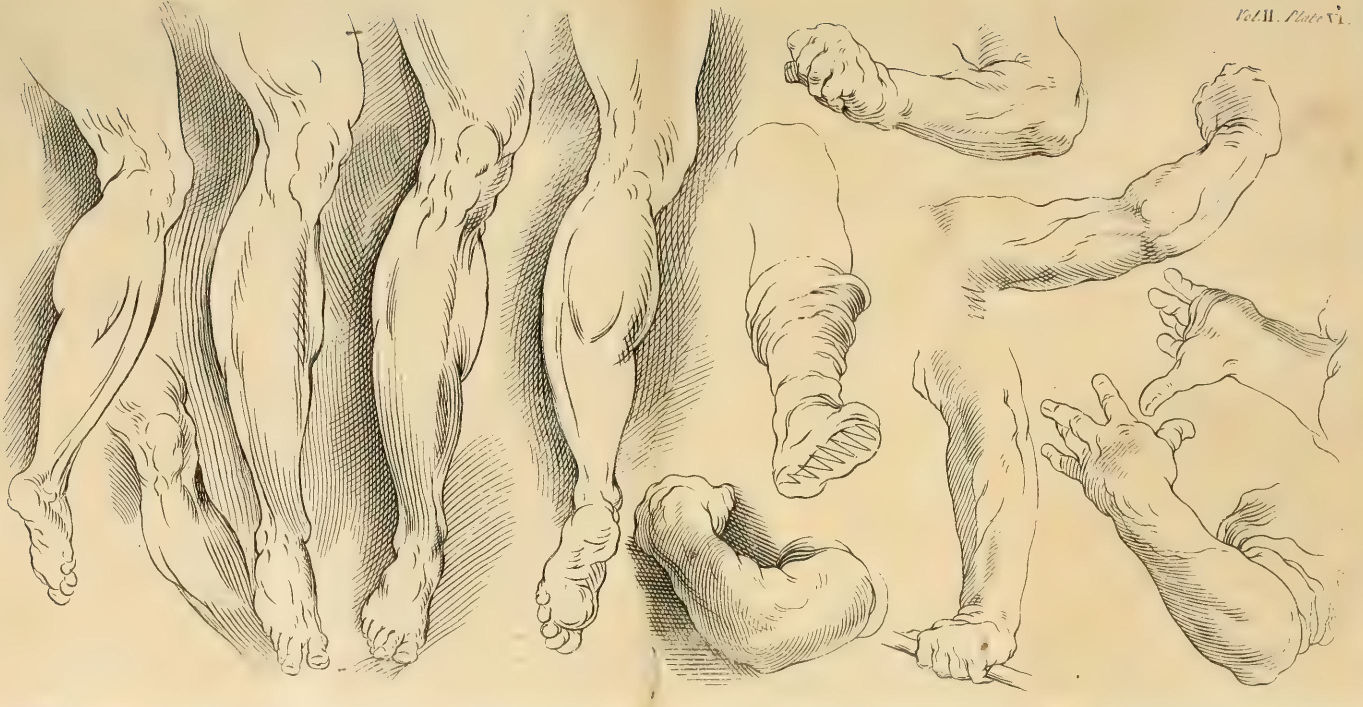
To make LEATHER *ſhine without GOLD.* Take whites of *eggs*, *gum-water*, and powder of *antimony*; mix them well together by beating, and having the skin well dried, lay the mixture on them, and do it often, till the leather be quite hid; when you have done this, let the mixture dry, and then burniſh them over; and if you have not *antimony*, you may uſe *black-lead*.

To dreſs or cover LEATHER *with SILVER or GOLD.* Take that which is called *brown-red*, and grind or move it on a ſtone with a muller, adding water and chalk; and when the latter is diſſolved, rub, or lightly dawb the skins over with it, till they look a little whitiſh; and then lay on the leaf-ſilver or gold, before they are quite dry; laying the leaves a little over each other, that there may not be the leaſt part omitted; and when they have well cloſed with the leather, and are ſufficiently dried on and hardened, rub them over with a poliſher made of ſmooth ivory, or of the fore-tooth of a horſe, and it will appear very luſtrous and bright.

Sir PETER LELY, was born in *Weſtphalia* in *Germany* in the year 1617, Scholar of *De Grebber* of *Haerlem*, and came into *England* in the year 1641. He at firſt painted Landskip with ſmall figures; but at length betook himſelf to face-painting, in which he exceeded all his contemporaries in *Europe*. He acquired a wonderful ſtyle in painting, both as to his correct draught and beautiful colouring; but more eſpecially in the graceful airs of his heads, and the pleaſing varieties of his poſtures, together with the genteel and looſe management of his draperies, he excelled moſt of his predeceſſors.

And, notwithſtanding the criticks ſay he preferred almoſt in all his faces a languiſhing air, long eye, and a drowſy ſweetneſs, peculiar to himſelf, for which they reckon him a *Manneriſt*, and that he retained a little of the greeniſh caſt in his complexions; whatever of this kind may be objected againſt this great painter, his works are in great eſteem both here and abroad, and equally valued and envied; for at that time no country exceeded his perfections.

Vol. II. Plate VI.



He was likewiſe a good hiſtory-painter: his crayon draughts are alſo admirable, and thoſe are reckoned the moſt valuable of his pieces, which were all done entirely by his own hand.

The Earl of *Pembroke* recommended him to king *Charles* II. who made him his principal painter, and knighted him.

He died of an apoplexy in *London* in the year 1680, and 63d of his age. There is a marble monument, with his buſt, raiſed for him in *Covent-garden Church*.

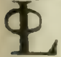
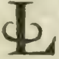
BALTHAZAR VAN LEMENS, a hiſtory-painter, born at *Antwerp*. His manner was very free, and often very graceful. His drawings and sketches are excellent. He died in *London* in the year 1704.

REMIGIUS VAN LEMPUT, *alias* REMEE, was a famous copier in the reign of king *Charles* II. of the neat maſters, as *Stone* was of the great *Italians*. He was a native of *Antwerp*, and a great copier of *Vandyck*, by whom he was much encouraged.

His pieces ſometimes, through the advantage of time upon them, paſs for that great maſter's, now age has a little embrowned the tint, ſoftened the colouring, and perhaps concealed ſome part of the ſtiffneſs whereof he ſtands accuſed by the criticks.

He had 150 *l.* for copying *Henry* VII. and *Henry* VIII. in one piece, after *Holbein*; being the famous picture that was on the wall at *Whitehall*, which was afterwards burnt.

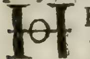
He was very famous for the beſt collection of drawings and prints of any of his time. It was he that bought the celebrated piece of king *Charles* I. on horſeback, by *Vandyck*, now at *Hampton-Court*, for a ſmall matter, in the time of the troubles, which carrying over to *Antwerp*, he was there offered 1000 guineas for it, and ſtood for 1500; but thinking that not enough, he brought it over to *England* again; where, the times being turned, and he ſtill inſiſting on the ſame ſum, the picture was taken from him by a due courſe of law, after it had coſt him a great deal of money to defend it. He died in *London* about 60 years of age.

 or  LUCAS VAN LEYDEN, a celebrated painter and engraver, uſed thoſe 2 marks in ſome of his Plates.

L. H. ſtands for *Lambert Hopfer*.

LIBERALITY is repreſented [in *Painting*, &c.] by a woman with a ſquare forehead, in a white veil, an eagle over her head, holding a *Cornucopia* turned upſide down in one hand, whence are ſcattered jewels and other precious things, and in the other hand fruits, and flowers.

The eyes and front reſemble the lion, the moſt liberal of al irrational creatures: The eagle denotes the habit of liberality, fo ſhe always leaves ſome of her prey to other birds. The *Cornucopia* ſhews that a generous ſpirit ſhould do good, but not out o vain-glory. The white veil, that ſhe has no ſiniſter deſign nor project of intereſt.


HANS LIENFRINCH thus mark'd certain plates, repreſenting birds and hunting-pieces with ornaments.

LONG LIFE is repreſented [in *Painting*, &c.] by an ancien lady in an antique habit, laying her right hand upon the head o a ſtag with large horns, and many branches; holding a crow i her left hand.

The ancient dreſs denotes the revolution of many years; th old ſtag alluding to that which was found 300 years after *Juliu Cæſar*, with a gold collar inſcribed HOC CÆSAR DONAVIT. Th crow outlives the ſtag, as it's ſaid.

SHORT LIFE is repreſented [in *Painting*, &c.] by a lad of juvenile aſpect, with a garland of various flowers, on her brea the figure of *Hemerobion* a little inſect, in her right hand a roſe branch, round which is written, *Una dies aperit, conficit un dies*, i. e. *it is diſcloſed, or buds and dies in one day*; and in he left the fiſh *Seche*. The garland ſhews the frailty of man tha loſes his ſtrength, as flowers fade, in a moment; the inſect th ſhortneſs of life, which is but the ſpace of one ſingle day; th *Seche* is a fiſh that lives not long.

Of the IMITATION *of* LIFE.

1. Firſt chuſe a good maſter, with whom you may ſpend a leaſt 2 days in a week; it might be better, if there were a ſociety of about 10 or 12 young men, who might be of uſe i aſſiſting one the other.

2. Then chuſe a well-ſhap'd man, one with large ſhoulder a fair breaſt, having ſtrong muſcles, full thighs, long legs, and c a proportional height, neither too tall nor too ſhort, neither to thick nor too ſlender, but one of a very regular and exact proportion and ſhape.

3. Let this exemplar ſtand in a good poſture, repreſentin ſome noble action of life, letting the head turn itſelf to the righ ſide, if the left be ſhadowed; and on the contrary; making th parts of the apparent ſhoulder ſomething higher than that whic is obſcured; and the head, if it looks upwards, leaning no fa ther backwards than ſo that the eyes may be ſeen; and in th turning of it, let it move no farther than ſo that the chin ma only approach the ſhoulder; making alſo the hip on that ſid on which the ſhoulder is loweſt, a little to ſtick out, and tha arm foremoſt where the leg is behind.

4. The ſame things are to be obſerv'd in relation to all four-footed beaſts; and this generally to make the limbs croſs-wiſe to cohere together, and in the turning of it forward, backward, upward, downward, ſideways, always to counterbalance it by the oppoſition of the other parts, the right knowledge of which is a conſiderable advance towards the *imitation of the life*.

5. Theſe things being ſo prepared, let the perſon, who is to begin, firſt sketch on the paper his own ideas (being fixt in a convenient place and light, as is elſewhere directed) wherein he muſt endeavour to make every part agree with the whole; *firſt* in form; *ſecondly* in proportion; *thirdly* in action. After this beginning again, run over the draught, and bring it to a concluſion, as ſhall be ſhewn hereafter.

6. Obſerving always, that after you have sketch'd your whole figure, that you chuſe a part (which you have moſt mind to finiſh) to perfect it, in regard that with the reſt ſtands in a good poſture. The reaſon for this is, becauſe time will not always eaſily permit to compleat or finiſh a whole figure, unleſs to ſuch as are expert artiſts; it being much better to bring one part to perfection, than to leave the whole imperfect.

7. It is alſo to be conſidered, after what manner you would have your figure to be ſeen, whether upon even ground, or from above; for accordingly the poſition of the exemplar muſt be made.

8. A young artiſt may alſo at his conveniency ſometimes view the country, and practice drawing of landskips, repreſenting nature as much as is poſſible; 1. in their diſtance; 2. in their mutual poſition; and 3. in viſible aſpect. By this means he will obtain a general and compleat underſtanding in the univerſal meaſures of all things.

9. In drawing of a face, conſider the circumference of it, as whether it be round or long, fat or lean, great or ſmall, ſo that ye be ſure in the firſt place to take rightly the dimenſions and bigneſs of the face.

In a fat face the cheeks muſt be made ſwelling out, and ſo make the face look as if it were ſquare.

If it be neither too fat, nor too lean, it will, for the moſt part, be round; but if it be a lean face, the jaw-bones will ſtick out, and the cheeks fall in, and the face will be long and thin or ſlender.

10. When you draw the utmoſt circumference of a face, remember to take the head and all with it, otherwiſe you may be deceiv'd; in drawing the true bigneſs of a face, you muſt alſo view and conſider judiciouſly all the gentle maſter touches, which give the ſpirit and life to a face, and diſcover the grace, affec-

tions, and diſpoſitions of the mind, wherein lies the excellency of the art and glory of the artiſt.

11. A *ſmiling* countenance is diſplay'd by the corners of the mouth, when they turn up a little.

A *ſtay'd* and *ſober* countenance by the eyes, when the eye-lids come ſomewhat over the balls of the eyes.

A *frowning* countenance by the forehead, by the bending of the eye-brows, and ſome few wrinkles between the 2 eye-brows, about the top of the noſe.

12. A *laughing* countenance is repreſented by the univerſal compoſition of the whole face.

An *angry* countenance is diſcern'd by extraordinary frowning. And there are alſo ſome touches about the eyes and mouth, which give a kind of life and ſpirit to a draught.

13. A graceful poſture is a principal thing to be obſerv'd in every picture; all things are to be expreſs'd with proper actions; to wit, in their true and natural motions, according to the life and ſpirit of them.

Majeſty is to be expreſs'd in a *king*, by delineating him in ſuch a graceful poſture, as may cauſe the ſpectators to behold him with reverence.

A *ſoldier* ſhould be expreſs'd in ſuch a poſture, as indicates the greateſt boldneſs and courage.

A *clown* ſhould be drawn in a ſordid and clowniſh poſture.

A *ſervant* or *page* ſhould be expreſs'd in a waiting and diligent poſture.

In all manner of draughts after the life, the inward affections of the mind ſhould be livelily expreſſed by the outward actions motions, and geſtures of the body.

14. But in order to attain an exquiſite knowledge of theſe things, it will be neceſſary to obſerve the works of the moſt famous maſters, and to ſtrive to imitate the examples of thoſe, who for a long time had accuſtom'd themſelves to draw all varieties of geſtures and poſtures; as the actions of combatants fighting at cuffs, wreſtlers, ſtage-players, fencers, the enticing allurement of courtezans, riding the great horſe, tournaments, *&c.* wherein the motion of the eyes and the hands, and the carriage of the whole body are exactly to be taken notice of, if you would in drawing expreſs any thing to the life.

15. And in order that it may appear the more natural and not forced, you muſt uſe a kind of careleſſneſs and looſeneſs in your draught, that the body may not be made ſtiff in any part; but that every joint may have its proper bendings, that the intention of the figure may not be lame, and the joints as it were ſtiffen'd, that every limb may have its proper freeneſs and looſeneſs, agreeable to the natural life of the picture.

16. In order to be able to make every thing thus naturally accord, the life muſt be diligently obſerv'd. No action muſt be forc'd beyond nature; if a perſon be repreſented turning his head over his ſhoulder, you muſt not turn it more than nature will admit. Nor ſhould it come ſhort of what bounds nature has allow'd it; but rather be quickened to the higheſt pitch.

As if you were to draw a man fighting, either in endeavouring to ſtrike, or avoid the ſtroke of his enemy; in running, wreſtling, leaping, *&c.* you muſt be ſure not ſo much to overdo nature, as to expreſs a poſture which cannot be imitated with his natural body.

Of LIGHT *and* SHADOW.

1. Set Lights and Shades in their proper places, in ſuch a juſt and equal proportion as nature herſelf gives, or the life requires, and as would give a true idea of the thing you would repreſent: ſo that it is not any colour whatſoever, nor any ſingle ſtrokes which are the cauſe of it; but that excellent ſymmetry of Light and Shadow, which gives the true reſemblance of the Light.

2. Take care in *ſhadowing*, that you do not ſpoil your piece by too groſs a darkneſs, whether it be hard or ſoft.

3. This obſervation of *Light* and *Dark*, is that which cauſes all things contained in your work to come forward or fall backward, and makes every thing from the firſt to the laſt to ſtand in their due and proper places, whereby the diſtances between thing and thing ſeem to go from you or come to you, as if it were the work of nature itſelf.

4. Suppoſe it be a figure of plaiſter, take good notice what appears forwards, and what backwards, or how things ſucceed one another; then conſider the cauſe which makes them in appearance either incline or recline; and alſo the degrees of light and darkneſs, and whether they fall forward or backward: and accordingly in your draught you muſt give but gentle touches, and after that heighten by degrees, according to what you copy after, and as your own ingenuity ſhall direct.

5. Thoſe parts which appear higheſt in your pattern are to be heightened in your work. The greateſt light that can be given on white paper is the paper it ſelf; all leſſer lights muſt be faintly ſhadowed in proportion to their reſpective degrees.

But upon coloured paper, white crayons and tobacco-pipe clay are uſed for the firſt and ſecond heightening, each in their proper places, as more or leſs light is required, which is a ſingular obſervation in this manner of drawing.

7. You ought alſo to avoid the heightening of too many places, nor any thing more than is needful, or that is near the

dark or ſhadows, or any out-line, (except where you intend ſome reflection) leſt the work ſhould appear hard or rough.

8. In heightening of ſuch figures as require great light, put the greateſt light in the middle, and the leſſer towards the edges for the making the work the more perſpicuous.

9. *Laſtly*, Leave on the ground of your paper faint places, ſufficient between the light and the ſhades, that they may appear pleaſantly to the eye with a ſingular plainneſs and ſmoothneſs.

10. Reflection is to be uſed in delineating glittering or ſhining bodies; as glaſs, pearl, ſilver, *&c.* Let the cauſe of the reflection, be it more or leſs, be ſeen in the thing it ſelf.

11. In plain drawing, lay all your ſhades ſmooth, whether it be in hatching or ſmutching, keeping every thing within its own bounds; and this is done by not making your ſhades too hard, or putting one ſhadow upon another too dark.

12. Take care that the greater parts of Light and Shadows, and the ſmall parts intermixt in the ſame, may always ſo correſpond, as thereby to make the greater the more apparent.

13. Let the higheſt Light in a whole picture (if any darkneſs ſhall ſtand in the middle of it) appear darker than it really is: and in working always compare *Light* with *Light*, and *Dark* with *Dark*; by which means you will come to know the power of each, and the general uſe of them in all operations.

14. Place all your Lights one way, through the whole work, either in figure, face, or garment.

15. If the *Light* falls ſideways on the picture, the other ſide, which is fartheſt from the *Light*, muſt be made the darkeſt, and place all the *Lights* together on the other ſide; and not confuſedly on both ſides; as if it ſtood in the midſt of many *Lights*: for the body cannot be enlightened equally in both places.

16. But if you expreſs a dungeon or priſon with a torch lighted in it, you muſt obſerve that every thing in it, as well as the garments, muſt receive their Lights from it; and for that reaſon muſt all be ſhadowed on the contrary ſide; which is to be obſerved in all ſhadowings on the ſame ſide.

17. The true and natural diſpoſition of light is that which gives the principal grace to a picture; for that without its due light is clearly another thing.

18. And alſo it may be beautiful in its kind, ſo far as it is wrought; but if it ſhall be afterwards ſhadowed without judgment or art, ſo that the *Shadows* be placed confuſedly where the *Lights* ought to be; or on the contrary, the *Lights* where the *Shadows* ſhould be, and the *concavities* and *convexities* out of their natural ſituations, the picture will not only be confuſed, but entirely ſpoiled.

19. Whereas, on the contrary, the lights being rightly diſpoſed, it ſo greatly adds to the perfection of the figure, that it makes the flat or plain ſeem to be *emboſſed.*

20. And thus light being rightly diſpoſed, effects that in the *painter*'s work, that ſubſtance and matter does in the *carver*'s work; inſomuch, that the figures ſeem to be emboſſed outwards; ſuch is the force of ***Light*** and *Shadows*.

21. And herein you will find admirable *ſcenes* and fore-*ſhortenings*, proceeding purely from the true diſpoſition of the ***Light***, without which the figure would not only ſeem to be imperfect, but alſo would loſe much of its grace, tho' it were otherwiſe well proportioned and placed.

22. This Light is the formal cauſe or reaſon why coloured things are ſeen, whoſe ſhapes and images paſs through the eye to the imagination; and eſpecially enlighten the eyes in which the image is formed; which firſt paſſes to the common *ſenſorium*, afterwards to the fancy or imagination, and laſtly to the underſtanding, by which every thing is diſcovered to be what it really is.

23. In reſpect to this ***Light***, three things occur to our viſive faculty, *viz.* the viſual lines, the coloured body, and the faculty of ſeeing, which is in the eye.

24. The *viſual lines lightened* (which are the proper ſubject of *perſpective*) come to the eye in a pyramidal form, the baſe of which pyramid reſts in the object, and the cone or angle of it comes to the eye more blunt and obtuſe, if the ſaid object be near, but more ſharp or acute if it be farther off; whereby it is not ſo clearly or eaſily diſcerned as it would otherwiſe be.

25. The *coloured object*, or body, comes not to the eye, but its viſible ſpaces or ſhapes are diffuſed through the clearneſs of the air into the eye; which ſpecies are only certain images like thoſe we ſee in a glaſs.

26. And if the coloured body ſtand near to this image, it comes to our eye in the ſame quantity and bigneſs of the angle of the pyramid, which being obtuſe or blunt, makes the image appear to be as large as indeed it is, and ſo diſcerned the more diſtinctly.

27. But if it be placed afar off, the viſible ſpecies appears leſs, according to the proportion of the diſtance, and acuteneſs of the pyramidal angle.

28. The *faculty of ſeeing*, is formed of the concurrence of the other two things, *viz.* the viſual lines, and the coloured body; which informs the eye by reducing it from mere ability into act, and ſo performing its operations, and cauſing the thing alſo to be ſeen alſo more apparently and diſtinctly.

29. From hence it is plain, that the ſelf-ſame body cannot be equally enlightened in all places; becauſe the *Light* does not directly illuminate any more than that part which is directly oppoſite to it: the other parts which are more oblique to it, are more imperfectly illuſtrated; by reaſon of the interception or obliquity of an opake body, through which its beams cannot pierce.

30. From the ſeveral diſtances of the eye to the parts of the ſame body; for as the firſt part of the body is ſeen and placed neareſt the eye, and ſo comes to it with a more obtuſe angle, ſo being more enlightened, it is alſo ſeen more diſtinctly: whereas the other parts being farther off, come to the eye in a more acute angle, and being leſſer enlightened, cannot be ſo plainly ſeen.

31. If two, three, or four men, ſtood one behind another, all of them equally receiving the light; yet they do not in reſpect to your eye: and therefore, by the former doctrine, you muſt paint the ſecond, which is fartheſt off from the eye, darker, the third darker than that, and the fourth darkeſt of all.

32. The reaſon is, becauſe the ſecond ſtanding farther off, comes to the eye with a leſſer angle (as aforeſaid) whereby it cannot be ſeen ſo evidently as the firſt; the ſame reaſon is for the third, fourth, fifth, *&c.*

33. The ſame thing is alſo to be underſtood, if the viſible ſpecies of one or many objects be ſeen ſideways; for according to their diſtance and obliquity of the eye, ſo you muſt ſhadow them.

34. That part of the body muſt be made lighteſt, which has the light moſt oppoſite to it: if the light be placed above the head deſcending, then the top of the head muſt be made lighteſt; the ſhoulder next lighteſt; ſo you muſt ſhadow by loſing the light by degrees.

35. That part of the body which ſtands fartheſt out, muſt be made lighteſt, becauſe it comes neareſt to the light, and the light loſes ſo much of its brightneſs, by how much any part of the body bends inward; becauſe thoſe parts which ſtick out, do hinder the glory and full brightneſs of the light from thoſe parts which fall any thing more hollow.

36. Therefore, by how much one part of the body ſticks out beyond another, by ſo much it muſt be made lighter than the other; and on the contrary, ſo much the darker.

LIGHTS [in *Painting*, &c.] are thoſe parts of a piece, which are illumined, or which lie open to the luminary by which the piece is ſuppoſed to be enlightened; and which, for this reaſon, are painted with bright vivid colours; and in this ſenſe *Lights* are oppoſed to ſhadows.

Light is alſo uſed for the luminous body that emits it; there are various kinds of *Lights*; general lights, as the *air*; particular lights, as a *candle*, the *ſun*, a *fire*.

Different lights have different effects on a piece of painting, and occaſion a difference in the management of every part.

Therefore much depends upon the painter's chuſing a proper *Light* for his piece to be illumined by, and a great deal more in the conduct of the lights and ſhadows, after he has pitched upon the luminary.

The ſtrength and relievo of a figure, as well as its gracefulneſs, depends entirely on the management of the *lights*, and the joining of theſe to the ſhadows.

The light that figures in a piece of painting receive, are either direct or reflected; to each of which ſpecial regard muſt be had.

The doctrine of lights and colours makes that part of *painting*, called the *clair obſcure*.

Of LIGHT, SHADOW, *and* COLOUR.

The drawer, engraver, and painter, ought all to purſue one and the ſame intention, and to be under one and the ſame conduct.

What the drawer or engraver makes round with the *crayon*, or ſteel inſtrument, the painter performs with his pencil, caſting behind what is to be made leſs viſible by diminution, and breaking of his colours; and drawing forwards by the moſt lively colours and ſtrongeſt ſhadows, that which is directly oppoſite to the ſight, as being neareſt and moſt to be diſtinguiſhed.

2. If ſolid and dark bodies are placed on light and tranſparent grounds, as sky, clouds, waters, *&c.* thoſe dark bodies, *&c.* ought to be more rough, and more to be diſtinguiſhed than thoſe with which they are encompaſſed; that being ſtrengthened by the lights and ſhadows, or colours, they may ſubſiſt and preſerve their ſolidity upon thoſe tranſparent grounds.

3. In the mean ſeaſon thoſe light grounds, as sky, clouds, waters, being clearer and more united, are to be caſt off from the ſight to a farther diſtance.

4. Two equal lights muſt never be made in one and the ſame picture; but a bigger and a leſſer: the bigger to ſtrike forcibly on the middle, extending its greateſt clearneſs on thoſe places of the deſign, where the principal figures of it are, and where the ſtrength of the action ſeems to be; diminiſhing it gradually, as it comes nearer and nearer to the borders.

5. This is evident in ſtatues, ſet up on high in publick places: their upper parts being more enlightened than the lower, which ought to be imitated in the diſtribution of light.

6. You muſt avoid ſtrong ſhadows on the middle of the limbs, leſt the abundance of black, which compoſes thoſe ſhadows, ſhould ſeem to enter into them, and ſeem to cut them; rather let thoſe ſhadowings be plac'd round about them, thereby to heighten the parts; making great lights to ſucceed great ſhadows.

7. On this account *Titian* ſaid, he knew no better rule for diſtribution of lights and ſhadows, than his obſervations drawn from a bunch of grapes.

8. Pure white, either draws an object nearer, or ſets it off to a farther diſtance: it draws it nearer with black, and throws it backwards without it: but pure black (above all other colours) brings the object nearer to the ſight.

9. The light (being altered by ſome colour) never fails to communicate ſomething of that colour to the bodies on which it ſtrikes: and the *medium* of air, through which it paſſes, has the ſame effect.

10. Bodies which are cloſe together receive from each other by reflection that colour, which is oppoſite to them, *viz.* they reflect on each other their own proper colour.

11. If a deſign is fill'd with many figures, you muſt always endeavour an union of colours, for fear, that being too different, they ſhould embarraſs the ſight by their confuſion with the great numbers of their members, ſeparated by certain folds.

12. And for this reaſon the *Venetians* paint their *draperies* with colours that are nearly related to each, and ſcarcely diſtinguiſh them any other way, but by the diminution of lights and ſhadows.

13. Thoſe parts of a picture, which are plac'd foremoſt or neareſt to the view, ſhould always be more finiſh'd than thoſe which are caſt behind; and ought to be more manifeſt than thoſe things, that are tranſient and confus'd.

14. Things ſituated at a diſtance, tho' they be many, yet ought to be made but one *maſs*. As the leaves on the trees, a flight of birds, billows in the ſea, *&c.*

15. Let thoſe objects, which ought to be ſeparated, be manifeſtly ſo, and that by a ſmall and pleaſing difference; but on the contrary, let not thoſe things be ſeparated that ſhould be contiguous; and where there are two contrary extremities, let them never touch each other either in colour or light.

16. Various bodies are every where to be of different airs and colours; that thoſe which are placed behind, may be united together;

ther, and thoſe which are plac'd foremoſt may be ſtrong and vely.

17. In painting either a half figure or a whole one, which is be placed before other figures, it ought to be placed nearer e eye, and next to the light: and if it is to be painted in a rge place, and at a diſtance from the eye, then you ought not be ſparing of great lights, the ſtrongeſt ſhadows, and the moſt vely colours.

18. But a *meridian* light muſt not be put in a picture, be- uſe there are no colours that can ſufficiently expreſs it; but ther a weaker light; as that of the morning or evening, whoſe *hiteneſs* is allay'd, and the fields are (as it were) gilded by the n-beams; or ſuch as appears after a ſhower of rain, which the n gives through the breaking of a cloud.

19. Thoſe parts which are neareſt to us, and moſt raiſed, muſt e coloured ſtrongly, as it were ſparkling: but thoſe parts on e contrary more remote from the ſight towards the borders uſt be touch'd more faintly.

20. The field or ground ought to be free tranſient light, and ell united with colours, which have a friendly agreement with ch other; and of ſuch a mixture, that there may be ſomething it of every colour, of which the work is compoſed, and let e bodies mutually partake of the colour of their ground.

21. The whole picture ought to be made of one piece; in do- g which, you muſt avoid, as much as poſſibly you can, to aint dryly.

22. Let your colours be lively; but not look as if they had een rubb'd or ſprinkled with meal, *viz.* you muſt take care ot to let them look pale.

23. When a picture is drawn by the life, nature muſt be ex- ctly followed, working at the ſame time on thoſe parts, which eſemble one another, *e. gr.* the eyes, the cheeks, the noſtrils, nd lips, ſo that you ſhould touch the one, as ſoon as you have iven a ſtroke of the pencil to the other; leſt by interruption r diſtance of time, you ſhould loſe the idea of thoſe parts, which ature has made to reſemble each other.

24. Thus you will, by imitating nature, feature by feature, ith juſt and harmonious lights and ſhadows, and proper co- urs, give to your picture that livelineſs, that it will ſeem, as it were perform'd by the living hand of nature.

25. Smooth bodies, ſuch as cryſtal, glaſs, gems, poliſh'd me- ls, ſtones, bones, woods, japans, things covered with hair (as kins, the beard, head;) alſo feathers, ſilks, and eyes, which are f a watery nature; and thoſe things which are liquid as water, nd ſuch corporeal ſpecies as are reflected by them; and all that ither touches or is near them, ought to be painted and united

on their lower parts, but ſhould be touched above boldly their proper lights and ſhadows.

26. Let the parts of the picture ſo much harmonize, that the ſhadows may appear as if they were but one; embrace wh ſoever may be aſſiſtant to you in your deſign, and ſhun wh ſoever may be diſagreeable to it.

27. Do not make any touches either with pencil, crayon, graver, before you have well conſidered and fix'd upon yo deſign, eſpecially as to the outlines, nor 'till you have preſe in your mind a perfect *idea* of what you would do.

28. You may be aſſiſted in many beauties, by means of looking-glaſs, which you may obſerve from nature; as alſo thoſe objects you may ſee in an evening, where you have ample field and a large proſpect.

29. Thoſe things that are painted, to be ſeen in little or ſm places, muſt be touch'd very tenderly, and be well-united gradual approach and colours; the degrees of which ought to more different, more unequal, more ſtrong, and vigorous, the work is more diſtant.

30. If the picture is to be plac'd where there is but little ligh the colours ought to be very clear; but if it is ſtrongly enligh ned, or in the open air, the colours ought to be very brown.

31. Large lights are to be painted as nicely as poſſibly can b and you muſt endeavour to loſe them inſenſibly, in the ſhado which ſucceed them, and encompaſs them about.

32. The eye is to be gratified in the firſt place, even befo all other conſiderations, which may cauſe difficulties in the a which in itſelf has none; the compaſs and deſign ought th to be rather in your eye, and in your mind, than in your han

33. Avoid objects which are full of hollows, which ſee broken in pieces, or refracted, which are little, and are ſep rated, or in parcels; things which are rude, uneven, ill-coloure and are diſpleaſing to the eye; or which are parti-coloured, a have an equal force of light and ſhadow.

34. All things ought to be avoided which are obſcene, i pudent, cruel, poor, and wretched, fantaſtical or unſeeml things which are ſharp and rough to the feeling; and all thin which corrupt their natural forms, by the confuſion of the parts, and are entangled in each other.

35. But you ſhould chuſe thoſe things which are beauti even in the utmoſt degree of perfection; that have ſomethin of magnanimity or greatneſs in them, and whoſe ſketches outlines will be noble and magnificent; which will be diſti guiſh'd pure, and without alteration clean, and united togeth compos'd of great parts; yet thoſe but few in number, and d

ſtinguiſh

ſ guiſh'd by bold colours, and ſuch as are related, and are har-
onious to each other.

36. Tho' nature ought to be followed in many, and in moſt
t ngs, yet beginners ſhould not be, at firſt, too ſedulous in fol-
l ving nature, leſt their works ſeem ſtarch'd or ſtiff; but ſhould
gin with a certain careleſſneſs, freedom, and boldneſs, which
ll facilitate and aſſiſt them in all their after endeavours, in or-
r to the attaining the perfection of the art.

37. In the mean time they ought to learn and qualify them-
lves with proportions, and connection of parts, and how to
the sketches or out-lines, and often to view and examine ex-
iſite originals, and all the inſenſibilities and ſweetneſſes of the
t, which will be attain'd by viewing the works of a ſkilful
aſter, rather than by practice alone.

38. After you have done ſome part of your piece, ſet it by
r ſome time without looking on it, then view it again; by
hich means you may chance to diſcover ſome faults or errors,
excellencies of your work, which you may either mend, a-
oid, or advance according to your ſkill and diſcretion. It
ill be in vain for you continually to pore over your work, and
ll your genius in ſpight of nature and your preſent inclination.

39. When you are walking in the ſtreets, fields, and coun-
y, you ſhould obſerve how nature plays, and is diſpoſed, and
e particular airs of the various objects; their poſtures, mo-
ons, and paſſions, and with what unconcern'd freedom they
ſplay themſelves.

40. And whatever you think worthy to be obſerved (tho' it
but in the repreſentation of a country clown, leaning with
s breaſt upon a ſtaff, as tho' talking unconcernedly with a
ighbour in field, &c.) either upon earth, in the air, fire, or
aters; while the ſpecies or ideas of them are freſh in your
ind, fix it upon your mind: and by this means furniſh your
agination and judgment.

41. Such objects as are of divers natures, and which are
grouped or combined together, are agreeable and pleaſant to
e ſight; and ſo likewiſe are all thoſe things which are per-
rmed with freedom and eaſe; becauſe they appear to be full
ſpirit, and to be, as it were, animated with heat and fire.

42. But theſe things are not to be expected to be attained
, till after a long exerciſe, and much practice; and till they
e thoroughly weighed and conſidered in your judgment and
nderſtanding: It is a point of art to conceal from beholders
e labour and pains you have beſtowed upon a piece.

43. If you would arrive at an excellence in the art, you
uſt endeavour after a ready apprehenſion, a diſcerning judg-
ent, an inclination to learn, a ſublime ſenſe, a warmth, or

fervor of ſoul, and a greatneſs of mind. If to theſe be added youth, diligence, a competency of fortune, a ſkilful maſter and good affection to the art (without which it will be impoſſible to attain any excellency therein, or arrive to the glory o your predeceſſors) but by theſe aſſiſtances you need not deſpair of being able to follow them very cloſe, if not overtaking them.

The LIGHT / *The* ITALIAN } *Way of* Painting.

How to draw a landskip, flowers, cattle, or any other figure you deſign to paint.

You muſt firſt take an oiled paper, and lay it upon a print or painting; be very careful that the paper is thoroughly cleanſed with the crum of bread; then draw what you deſign with black, and afterwards turn the ſaid paper on the wrong ſide: touch all the lines you have drawn with a piece of red chalk; you need not chalk them very ſtrong, but faintly.

Then lay the chalked ſide of the oil'd paper upon the leather or paper, and with a porcupine's quill draw the lines over, not leaning too hard upon it, and you will have all the lines appear very plain upon the paper or leather.

After you have thus prepared your paper or leather, by drawing your deſign, take a little flake white, mixed with gum, as the other colours are, dip your pencil into the white of eggs, (let them be well beat firſt) according to what quantity you uſe; and let the white ſeem tranſparent: but be careful that you don't put too much egg into it; becauſe it will make it of too ſlimy a ſubſtance.

Then with your pencil lay all over the figure or landskip with the ſaid flake-white, obſerving at the ſame time to lay it very thin.

When it is dry, begin to colour the figures firſt, and then the landskip; becauſe the figures being coloured firſt, will be fuller and clearer, and then you will ſee better to colour the landskip: but you muſt be very careful in doing this, that you don't go over any of the figures, but keep them and the landskip clear and in their proper colours; becauſe if in colouring the landskip you go over the figures, you will not bring it to its proper colour, but be in danger of ſpoiling the figures. Therefore be very careful in colouring, and give every thing its proper colour, whether cattle, landskip or any other figure; without running one into or over another; but keep all clear and in their proper places.

What GUM is to be made uſe of.

The moſt proper for this uſe is gum *Arabick*, which is indeed preferable to all other gums.

The manner of uſing it is as follows: put as much as you hink fit into a gallipot, cover it with water, and when it is well liſſolved, pour it off into another gallipot, and with a ſtick beat t up till it is fine, and thick as an oil. If what you pour off at irſt is too thin, take more of the thick which is left in the other ot, and put to it, and beat it up till it is as thick as an oil.

Be careful in this; becauſe if the gum is not well prepared, he colour will fly and break off.

What COLOURS are to be made uſe of.

Umber, burnt and not burnt,
Red-Oaker ground,
Engliſh-Oaker ground,
Red-Lead waſhed,
Blue-Smalt mixed in a ſhell,
Carmine mixed,
Blue Verditer mixed,
Flake-White ground with gum upon a ſtone,
Dutch-Pink ground and kept moiſt,
Roſe-pink ground,
Lamp-black ground,
Blue Litmouſe, which is ſold at the potter's,
Gamboge ſteeped in water,
Sap-Green, after the ſame manner,
Ultra-marine for a fine piece; otherwiſe blue ſmalt, or *Pruſſian* blue will do as well.
Indico, the beſt; not indico blue, but *la ouge* indico.

As to theſe colours, ſome are to be ground, ſome ſteeped, ſome waſhed, and ſome burnt and ground; the manner of doing which, is as follows.

Flake-White is to be ground with gum thus: Lay the flake-white upon a ſtone, and put as much gum to it as will make it ſo ſtiff that you can hardly move the muller round; then add water to it by little and little, till the colour is of the thickneſs of an oil.

Umber is burnt thus: put as much of it into the fire as you think fit, and let it continue there till it is red-hot: then take it out, and grind it very fine with water firſt, and when it is pretty dry, add gum to it till it is of the ſame ſubſtance with the flake-white, and put but a little water to it, becauſe the burning takes away the nature of binding.

Umber that is not burnt is eaſier to grind.

Add but a little gum to it, and grind it to the thickneſs of the other colours.

Red-Oaker muſt be ground after the ſame manner as the unburnt umber; only take care to pick out the ſtones that are frequently found in it.

Engliſh-Oaker muſt be done after the very ſame manner.

Red-Lead is to be waſhed as follows: but in buying it you muſt be ſure to chuſe that which is paleſt, for that runs the fineſt: Put about a quarter of a pound into a veſſel, then fill it almoſt full with water, skim it well with a ſpoon or ſtick, and in about a minute pour it off into a larger veſſel.

You muſt take care not to pour it off too near the bottom: then pour in more water, and skim it, as before; let it ſettle, and pour it off, as before.

You may do this three or four times.

This done, pour the water from the lead, leaving only moiſture enough to pour the lead into a chalk-ſtone, where it will immediately dry fit for uſe.

Maſticoat muſt be waſhed in the ſame manner as you waſh red-lead.

Blue-Smalt, you muſt buy the beſt you can get, and mix it after this manner: put as much as you think fit into a ſhell, and as much gum, prepared as aforeſaid, as will wet it well, by mixing it with your finger: then add water to it, till it is of a proper thickneſs; thus you muſt do to moſt of the other colours, except the thin ones, which I ſhall ſpeak of in their proper places.

Blue-Verditer muſt be mixed in a ſhell, after the ſame manner with the former.

Carmine, likewiſe, muſt be done in the very ſame manner, only you muſt not uſe quite ſo much gum.

Ultra-marine is prepared after the ſame manner.

When you have waſhed the red-lead, mix it in a ſhell, juſt as you do the other colours; which method muſt be taken in preparing maſticoat.

Indico muſt be well ground with water firſt, and then prepared as the Umber which is not burnt.

Dutch-Pink muſt be ground firſt with water, and then with gum, but not ſo much of the latter as in the other colours.

Roſe-Pink muſt be prepared the ſame way.

Lamp-Black muſt be ground with gum firſt, adding afterwards a little water.

Blue-Litmoſe muſt be ſoaked after this manner: put as much of it into a baſon as you think fit, and cover it with water; let it ſtand thus ſeveral days, then pour it off, and you will have a very fine blue colour.

You may thicken it by ſetting it in the ſun.

Sap-green muſt be ſteeped in a little leaden pot, or a ſhell, but not poured off: for which reaſon you muſt put no more water than what will juſt ſoak it, and then it is fit for uſe.

Gamboge may be done the ſame way.

As to mixing the colours for laying in the faces, the method is as follows: firſt, you muſt have the white of eggs by you, well beaten, and poured off from the froth; put a little into a ſhell, and let it ſtand by you to dip your pencil in; and when you have prepared the other colours for a very fair face, take a little carmine, and the like quantity of red-lead, but let it moſt incline to the carmine; then dip your pencil into the egg, and mix it with the aforeſaid colours, doing the ſame very thin; this you muſt do with all the other colours: but be careful of taking too much colour at a time, for the egg will make it ſwell.

As to mixtures: for a very fair face take carmine and red-lead, a little of each; let it incline moſt to the firſt, and put it in a ſhell; dip your pencil into the egg, and mix it with the ſaid colours at the ſide of the ſhell; and then if you perform a young man's face, you muſt do as before, taking red-lead and yellow oaker, a little of each, but moſt inclining to the firſt. For a brown face, uſe red-lead unburnt, and a little roſe-pink, mixed ſo well together as not to be eaſily diſtinguiſhed: for yellowiſh fleſh take red-lead and a little *Dutch*-pink; for a purpleiſh face, red-lead, roſe-pink, and indico: if any other coloured face, that you may ſee in pictures, add ſome of theſe mixtures, according as your genius directs; but be ſure to make them as fleſh-like as you can.

For fair hair take unburnt umber, and a little yellow-oaker: for black, add lamp-black; for brown, take burnt umber and yellow-oaker; for yellow, which is commonly uſed for a fair face, take yellow-oaker and a little umber.

You muſt be ſure not to put white in any of the colours; for after you have laid the prime-colour, as aforeſaid, all muſt be worked up without any white.

As to garments, for blue ones take verditer, ſmalt, or ultra-marine, and finiſh as far as you can with the ſame colours worked deep.

Obſerve the thin part of the colour, lay the garments, and work ſtrong with the thick part of the colour: for red, take carmine alone, or with red-lead, or with lake; for purple, blue-ſmalt and lake; for crimſon, lake alone; for green, blue verditer and *Dutch*-pink, ſhaded with indico and *Dutch*-pink; for yellow, *Dutch*-pink ſhaded with umber; for a cloth-colour, roſe-pink, indico, and burnt umber mixed, ſhaded with the ſame.

So likewiſe of any colour that you have, firſt lay the thin and ſhade with the deepeſt colour; and as to any colours mix them as you pleaſe, except the thin tranſparent colours, which will not bear it; and for linnen uſe thin *Dutch*-pink, ſhaded with unburnt umber and indico.

For cattle, you muſt imitate nature, or your pattern; it being ſo various, that there are hardly any rules to be ſet; only lay the firſt colours thin, as in the drapery, and ſhadow the firſt ſhades with the thickeſt part of the colour.

If you paint a white horſe, dog, or fiſh, or fowl, let the firſt colour be *Dutch*-pink, laid on ſo thin as hardly to be diſcerned; let the next ſhade be indico and unburnt umber: if you do any of theſe in brown, take umber burnt or unburnt, ſhaded with the ſame; if grey, with black and white, or indico and white: you may colour ſome with red-lead, and *Engliſh*-oaker, or any other colour, taking care to ſhade with the ſame colour.

In landſkips, for the sky, firſt draw out faintly the clouds in the sky, and then colour the sky with thin verditer, or ſmalt, leaving the clouds clear; then colour the clouds with thin *Dutch*-pink, and ſhade them with a reddiſh purple, made of red-lead, roſe-pink, and blue-ſmalt; then finiſh the sky with the thick part of the blue, and ſo intermix the colours by degrees, that they may ſeem to be laid on all together, like a fine print or picture.

Trees muſt be coloured with blue verditer, and unburnt umber, if you deſign their colour to be a blue miſty green, adding, for difference, roſe-pink or red-oaker, or yellow oaker, red-lead, or carmine; taking care that it inclines to a greeniſh colour, for thoſe which are to appear near.

For a blue-green, take blue verditer and *Dutch*-pink; if yellow, add more *Dutch*-pink; if reddiſh, add red-lead, or carmine; for deep green, indico and *Dutch*-pink, ſhaded with the deepeſt part of the colours.

For the bodies of trees, take umber and blue, or umber and yellow, or umber and green.

Imitate nature and good patterns.

In finiſhing garments, let the egg be quite laid aſide, becauſe it will give a deadneſs to the other colours; then take for the blue garments, ultra-marine in the darkeſt part, and it will look clear and well; for red, take fine lake, or carmine, in the darkeſt part of the reds; in purples, uſe carmine and litmoſe; in green, uſe verdigreaſe and indico; if bluiſh, add more indico; if yellowiſh, more verdigreaſe; for yellow, uſe lamp-black and gamboge, and a little litmoſe for a pale one; for a deep yellow, uſe carmine, verdigreaſe, and a little litmoſe.

To finiſh the faces, after you have ſhaded them, as before, take care not to uſe any egg: to ſhade the yellow, or red faces, uſe carmine, and verdigreaſe, giving the ſtrongeſt touches with it, and ſmooth it upon the lighter part of the ſhade; but take care not to go over the light part with it, but keep in the firſt ſhades.

For fair faces, uſe carmine, verdigreaſe, and litmoſe; taking care not to go over the firſt ſhades.

Let theſe ſhades be faint for fair faces, only touched ſtrong in the dark places with carmine and verdigreaſe; then take a little red-lead and carmine for the bluſh of the face; then take a little litmoſe, and touch the bluiſh ſhades very faintly; then look at the faces, and give them dark ſtrong touches in the eyes, and a ſtrong touch in the mouth; then look and ſee if the bluſh is bright and ſmooth, and it is done.

For fair hair of women, ſhade with carmine, verdigreaſe and litmoſe; ſometimes add gamboge, for a very fair yellowiſh hair.

Take notice, firſt to lay the colours as aforeſaid, then ſhadow the faces and hair, then the drapery, and then the landskip.

Mr. WILLIAM LIGHTFOOT, was a good *Engliſh* painter in perſpective, architecture, and landskip. He began in diſtemper, but afterwards took to oil-painting; he was concerned in contriving and adorning ſome part of the *Royal-Exchange.* He died in *London* about 70 years ago.

PIRRO LIGORIO was ſcholar of *Giulio Romano*, lived at *Naples* and *Rome*, excelled in hiſtory and architecture, and died in the year 1573.

LILY [to paint in *miniature*] cover it with white, and ſhade with black and white; do the ſeeds with *orpiment* and *gallſtone*; and the green of the leaves and ſtalks with *verditer*, ſhaded with *iris-green.*

The many-flowered LILY [in *miniature*] for the firſt colour uſe *mine de plomb*, then *vermilion*, and in the ſtrongeſt of the ſhades *carmine*, and finiſh with the ſame in ſtrokes, which correſpond with the turn of the leaf.

Heighten the lights with *mine de plomb*, and *white*, and imitate the ſeed with *vermilion* and *carmine.* Let the green be done with *verditer*, and ſhaded with *iris-green.*

The DAY LILY. There are three ſorts of this flower:

1. *Gridelin*, a little reddiſh.
2. *Gridelin*, very pale.
3. *White.*

For the *firſt*, lay on *lake* and *white*, and ſhade and finiſh with a deeper mixture of the ſame, with a little *black* added to it, to ſadden it, eſpecially for the deepeſt places.

For the *ſecond*, lay on white mixed with a very little *lake* and *vermilion*, ſo that theſe 2 laſt do hardly appear; then ſhade with *black* and a little lake, taking care to make the heart of the leaves next the ſtalk *redder*, which, as well as the ſeed, muſt be of the ſame colour, eſpecially towards the top, and lower a little greener.

Let the ſtalk of the ſeed be done with *maſticote*, ſhaded with bladder-green.

The other flowers of this ſort are done with white alone, and ſhaded and finiſhed with *black* and *white*.

The ſtalk of theſe laſt, and the green of them all, muſt be of the *ſea-ſort*, ſhaded with *iris-green*.

LIME, calcined ſtone, marble, free-ſtone, chalk, or other matter, burnt by a large fire, in a kiln or furnace built for that purpoſe; for the moſt part to be uſed afterwards in a compoſition of mortar for building; the fire taking away all its humidity, and opening its pores, ſo that it becomes eaſily reducible to powder.

Quick-lime, } Is that which is as it comes out of the
Unſlaked-lime, } furnace, and *ſlak'd-lime*, is that waſhed or ſteeped in water.

To dye Stuff a LIMON, or LEMON *colour*. Boil the ſtuff an hour and a half with 3 pound of *alum*, 3 ounces of *ceruſe*, and 3 ounces of *arſenick*; pour off the water, then put in freſh, and in the ſame kettle make a liquor of 16 pounds of *green dyer's-wood*, 3 ounces of pot-aſhes, 2 ounces of *turmerick*; let them ſettle and boil; then paſs the ſtuff quick through it, and it will be of a good lemon-colour.

To dye Silk a LIMON-colour. This dye muſt firſt of all be tenderly handled, and done in weak Suds, and may be regulated by comparing the colour with a *lemon*; which when done, rinſe and dry it.

LIMNING, is the art of painting in water-colours; in contradiſtinction to painting, properly ſo called, which is done in oil-colours.

Limning is by far the more ancient kind of painting: the art of painting in oil is far more modern, it not being known till the year 1410, when it was found out by one *John Van Eyck*, a *Flemiſh* painter, better known by the Name of *John* of *Bruges*. Before his time all the painters painted in water and freſco alone, both on wooden boards, walls and elſewhere.

When they made uſe of boards for painting, they uſually glewed a fine linnen-cloth over them, to prevent their opening, and then laid on a ground of white; they alſo mixed up their colours with water and ſize, or with water and yolks of eggs, well beaten with the branches of a fig-tree; the juice of which being thus mixed with the eggs, was the mixture with which they painted their pieces.

In *Limning*, all colours are proper enough, excepting the white made of lime, which is only uſed in *freſco*.

But the *azure* and *ultra-marine* muſt always be mixed up with ſize or with gum; becauſe the yolks of eggs give yellow colours a greeniſh tincture.

But before theſe colours, tho' mixed with ſize, are laid on, there are always applied two lays of hot ſize: the compoſition made with eggs and the juice of fig-tree being only uſed for touching up and finiſhing, and to prevent the neceſſity of having a fire always at hand to keep the ſize hot; yet it is certain, that the ſize-colours hold the beſt, and are accordingly always uſed in cartoons, *&c.* This ſize is made of ſhreds of thin leather or parchment: to *limn* on *linnen* they chuſe that which is old, half worn and cloſe; this they do over with white-lead, or with a fine plaiſter beaten up with ſize; which when dry, they go over it again with a lay of the ſame ſize.

The colours are all ground in water, each by it ſelf; and in proportion as they are wanted in working, are diluted with ſized water.

If yolks of eggs are to be uſed, they are diluted with a water made of an equal quantity of common water and vinegar, with the yolks, white and ſhell of an egg; and the ends of the little branches of a fig-tree cut ſmall, all well beaten together in an earthen pan.

If they would have the piece varniſhed, when finiſhed, they go over it with the white of an egg well beaten, and then with varniſh.

But this, however, is only to preſerve it from wet; for the great advantage of Limning conſiſts in its being free from any luſtre; in regard that all its colours thus void of luſtre, may be ſeen in all kinds of lights; which colours in oil, or covered with varniſh, cannot.

Of Preparations *for* LIMNING.

1. Be provided with two ſhells, or ſmall glaſſes, to hold clean water; the one for tempering the colours with, and the other for waſhing your pencils in when they are foul.

2. Beſides thoſe pencils you limn with, have a large clean dry pencil, to cleanſe your work from any kind of duſt that may fall upon it: theſe pencils are called *fitch-pencils.*

3. A ſharp penknife, for taking hold of any looſe or ſtraggling hairs that may come out of your pencil, either upon the work or among the colours; or to take out ſpecks of any thing that may fall upon your card or table.

4. A Paper with a hole cut in it to lay over your card, to keep it from duſt and filth to reſt your hand upon, and to keep the Parchment from being ſullied by the ſoil and ſweat of your hand; as alſo for trying your pencils on before you uſe them.

Lay the ſhells or ſmall glaſſes, water, pencils, or pen-knife all on your right hand.

5. Be provided with a quantity of light carnation or fleſh colour, tempered up in a ſhell by itſelf, with a weak gum-water, made of *white* and *red lead,* if it be for a fair complexion; to which add a little *maſticote* or *Engliſh oaker*, or both, if it be for a brown complexion.

6. But you muſt be ſure to take care, that the fleſh colour be always lighter than the complexion you would repreſent; for that it may be brought to its true colour.

7. Place your ſeveral ſhadows, for the fleſh colour, in a large horſe muſcle-ſhell in little places diſtinct from one another.

8. Lay a good quantity of white by itſelf, that it may be ready in all ſhadowings, beſides what the ſhadowings are firſt mix'd with.

9. For *red* for the cheeks and lips, temper *lake* and *red lead* together; and *indigo*, or *ultra-marine* and white for blue ſhadows, as thoſe under the eyes and veins.

10. For grey, faint ſhadows, *white* and *Engliſh oaker*, and ſometimes *maſticote*; for deep ſhadows, *white*, *Engliſh oaker*, *umber*; for dark ſhadows, *lake* and *pink*, which make a good fleſhy ſhadow.

11. In making choice of a light,

Let it be fair and large, one northerly and not ſoutherly, and free from ſhadows of houſes or trees; and all clear sky-lights coming in direct from above, and not tranſverſe. As to the room, let it be cloſe and clean, and free from the ſun-beams.

12. As to the manner of ſitting;

Let the desk on which you work be ſo ſituate, that ſitting before it, your left arm may be towards the light, that the light may ſtrike ſideling upon your work.

Let the perſon you are to limn, be poſited in the ſame poſture that he himſelf ſhall chuſe, level with you, and not more than 6 yards from you at moſt.

13. Obſerve the perſon's motion, if never ſo ſmall; for the leaſt motion amiſs, if not recall'd, will inſenſibly lead you into many errors.

14. When you have finiſh'd the face, let the perſon ſtand, not ſit at a farther diſtance, 4 or 5 yards off, for your drawing the poſition of the clothes.

15. If you are to limn upon ſattin, ſteep iſing-glaſs for 24 hours in fair water, and then boil it in ſpirit of wine, until it grow very clammy, which may be known by dipping your finger in it: and after you have drawn your out-lines upon ſattin, waſh it thin over with an indifferent large pencil, as far as your out-

lines are, which will prevent the colours from ſinking or flowing.

16. The better to prevent your colours from ſinking into your card, paper, or parchment, you deſign to limn on,

Boil ſome roch-alum in ſpring-water; then take a bit of a ſpunge, and with it wet the backſide of the paper that you are to draw on very thin: while the water is hot, be as quick in wetting it as you can; and this will hinder the colours from ſinking.

17. In the laſt place, you muſt obſerve theſe general rules:

1. That if your colours peel, or will not lie on by reaſon of the greaſineſs of the parchment, then you muſt mix a little ear-wax, or civet, with them, and it will help them.

2. That the perſon you draw by, ſit not above 6 foot from you.

3. That the perſon you draw by, ſit in a higher ſeat than you that draw.

4. That you draw not any part in the face of a picture exactly at firſt; neither finiſh an eye, noſe, or mouth, till the reſt of your work come up, and be wrought together with it.

5. That when you have finiſhed the face, let the party ſtand up, for you to draw the drapery by.

6. That *blue bice* is never uſed in a face.

7. That *black* muſt not be uſed by any means; as for the other ſhadows, your own obſervation muſt direct you.

The Practice of LIMNING, *or* DRAWING *a face in colours.*

1. As to the beginning of the work: Having all your materials in readineſs, lay the prepared colour on the card (anſwerable to the complexion preſented) even and thin, free from hairs and ſpots over the place, where the picture is to be.

2. The ground having been thus laid, and the party placed in a due poſition, begin the work, which is to be done at 3 ſittings; at the firſt ſitting you are only to dead-colour the face, which will require about two hours time.

3. At the ſecond ſitting, go over the work more curiouſly, adding its particular graces or deformities, couching the colours ſweetly, which will take up about 5 hours time.

4. At the third ſitting, you muſt finiſh the face, perfecting all that has been left imperfect and rough; putting the deep ſhadows in the face, as in the eyes, brows, and ears, which are the laſt of the work, and are not to be done till the hair, curtain or backſide of the picture, and the drapery be wholly finiſhed.

5. *The operation, or work at firſt ſitting.*

Having laid the ground, or complexion, in the next place draw the out-lines of the face, which do with lake and *white* mingled: draw theſe but very faintly, that if you happen to miſs, either in proportion or colour, you may alter it.

6. When you have done this, add red-lead to the former colour for cheeks and lips; but let it be but faint (for you cannot lighten a deep colour) taking care to make the ſhadows in their due places, as in the cheeks, lips, tip of the chin and ears, the eyes, and roots of the hair: don't ſhadow with a flat pencil; but by ſmall touches, and ſo go over the face.

7. Strive, as near as poſſibly you can, in this dead-colouring, to imitate nature rather than to be curious.

8. Having put the red ſhadows into their due places, ſhadow about the colours and borders and balls of the eyes with a faint *blue*, and under the eyes and about the temples with a greyiſh *blue*; heightening the ſhadows as the light falls; alſo the harder ſhadows in the dark ſide of the face, under the eye-brows, chin, and neck.

9. Bring all the work to an equality, but add perfection to no particular part at that time; but imitate the life in likeneſs, roundneſs, boldneſs, poſture, colour, and the like.

10. Laſtly, touch at the hair with a ſuitable colour, in ſuch curls, folds, and form, as may either agree with the life, or grace the picture: fill the empty places with colour, and deepen it more ſtrongly than in the deepeſt ſhadowed before.

11. *The operation at the ſecond ſitting.*

As it has been before laid but rudely, ſo you muſt ſweeten thoſe varieties which nature affords, with the ſame colours, and in the ſame place, driving them one into another; yet ſo as that no lump or ſpot of colour or rough edge may appear in the whole of the work; and this is to be done with a ſharper pencil than that you uſed before.

12. Having done this, go to the back-ſide of the picture, which, if it be a landskip, or a *blue* or *red* ſattin curtain; if it be blue, temper up as much *bice* as will cover a card, which mix very well with gum; and draw the out-lines of the curtain with a pencil; as alſo of the whole picture: then on the whole ground on which you intend to lay the blue, lay with a large pencil thinly, or airily over the whole ground; and afterwards lay over the ſame a ſubſtantial body of colour, which ought to be done nimbly, keeping the colour moiſt, and not ſuffering any part to be dry, till you have covered the whole.

13. If the colour of the curtain is to be of a *crimſon* colour; lay the ground of a thin colour, and lay the light with a thin wateriſh colour where they fall; and while the ground is yet

wet, lay the ſtrong and hard ſhadows cloſe by the other lights, with a ſtrong, dark colour, tempered ſomething thickiſh.

14. Then lay the linen with a faint white, and the drapery flat, of ſuch a colour as you would have it be.

15. Obſerve what ſhadows in the face are too light or too deep for the curtain behind, and the drapery, and reduce each to their due degree of height; draw the lines of the eye-lids, and ſhadow the entrance into the ear, deepneſs of the eyes, and any eminent mark in the face, with a very ſharp pencil.

16. In the laſt place, go over the hair, giving it the colour that it appears to have in the life, caſting ſome looſe locks of hair over the ground; which will cauſe the picture to ſtand as it were at a diſtance from the curtain.

17. Let the linnen be ſhadowed with *white*, *black*, and a little *yellow* and *blue*, the *black* being deepen'd with *ivory-black*, mixed with a little *lake* and *indico.*

18. *The operation at the third ſitting.*

This third operation is taken up wholly in giving ſtrong touches where you perceive occaſion, in rounding, ſmoothing, and colouring the face; which to do, will be the better perceived after the curtain and drapery has been done.

19. In the next place, conſider whatſoever may conduce to render the work as perfect as you poſſibly can, either as to caſts of the eyes, moles, ſcars, windings of the mouth, geſtures, or the like; and take care never to make your deepeſt ſhadows ſo deep, as they appear in the life.

20. *How to heighten and deepen the ground-colour for hair.*

If it be in miniature that you paint, the colour of the hair muſt not be ſo light as the lighteſt, nor ſo deep as the deepeſt ſhadow; but in a middle proportion between both, on which you may either heighten or deepen at pleaſure.

21. If it be laid on with the lighteſt colour, it will require a long time to work it down; and if it be as dark as the deepeſt, it cannot be deepened lower with the ſame colour.

22. And beſides, this ground-colour muſt be laid exceedingly even and ſmooth; and the quicker it is done, the better it will be.

23. A gooſe-quill pencil is the moſt proper to be uſed in doing this, and the temper of it ought not to be too thin; becauſe if ſo, the parchment will appear through the ground, which ought to be covered; and you ſhould rather go over it again with the ſame colour, than to let it appear ſo.

Of LIMNING DRAPERY.

1. In drawing of garments be very careful in habiting every one, according to the degrees and functions of the perſon deſcrib'd, giving them alſo their right or proper colours.

As for example, *John Baptiſt* in a *hairy mantle*, *John* the *Evangeliſt* in *ſcarlet*, and the Virgin *Mary* is commonly repreſented in *purple* or *azure*, and the reſt of the Apoſtles in *green* or *crimſon*.

2. There are 2 ways of working *drapery*; the *firſt way* is us'd by the *Italians*, this is done with the point of a pencil, and hatching it. Theſe are us'd chiefly in *miniature*.

3. Some places are touch'd all over alike, yet ſo as when it is finiſh'd, you may perceive the parchment in ſeveral places quite through the work; which is indeed too ſlight a way, and ſhould rather be call'd *waſhing* than *limning*.

4. The *ſecond way*, which is the beſt, is as follows:

Firſt, lay a full, flat ground all over, where your *drapery* is to be, of the colour you deſign it to be; which being done, you will find it much eaſier to be wrought upon, and may be either heightened or deepened at pleaſure.

5. If you would have the drapery *blue*, take an indifferent large pencil, pretty full of either *ultramarine*, or of *Dutch bice* well-prepar'd, and therewith lay the colours even and ſmooth all over the place intended for the drapery, and afterwards deepen it with *lake* and *indigo*.

Heighten it very faintly and fair in the greateſt lights; the like is to be done in all the colours of drapery whatſoever.

6. *Crimſon velvet*, *red*, *green*, and *blue*, may be heightened with fine ſhell-gold, to which it will give an admirable luſtre and beauty, eſpecially if ſome of the gold be mix'd with the ground colour itſelf, which will render it much the fairer.

After this manner great painters heighten all their works of architecture and buildings, eſpecially in ſtately rooms and palaces.

7. Take care to draw the out-lines of the garment very true and faint, becauſe the whole grace of a picture conſiſts much in the outmoſt draught, and more than in the curious work within.

8. To do this, the garments muſt be well ſuited to the body, and made to bend and yield with it, and not ſtrait and ſtiff where that bends.

9. In order to fit the garments rightly to the body, obſerve which part of the body bends in or out, that the garments may anſwer to the body upon the leaſt turning any way.

10. In order to make the garment turn with it, you muſt conſider where the body would be, if it were bare; and there take care to form the garments in the right place, making them to bend or ſit out according to the joints or limbs, and ſometimes the limbs muſt be made to appear plainly through the garments; and eſpecially if they be driven with the wind, or

any other action, they muſt lie looſe from the body. In ſuch caſe they muſt be lightly expreſs'd, and with a ſort of tranſparency.

11. You muſt begin firſt at the upper parts of the garments, and ſo draw down that part of the garment (on both ſides) which lies cloſe to the body, before you draw the looſe parts, which fly off from the body.

12. For if the looſe parts ſhould be firſt drawn, before thoſe parts, which lie cloſe to the body, are finiſhed, you will be out before you are aware, and be apt to draw the body awry.

13. For this reaſon ſome great artiſts do draw lightly the naked body firſt, and clothe it with the garments afterward; by which means they can ſee the better to place the clothing rightly, and ſo as to hang even upon the body.

14. The largeſt folds muſt alſo be firſt drawn, and ſtruck into the leſs; and you muſt be ſure not to make one fold to croſs another; and alſo break ſome large folds into leſs, and ſo make them narrower, where the garments ſit cloſer.

15. Take care alſo to order the drapery, ſo that the folds may fall all one way, eſpecially in a figure in a ſtanding poſture; tho' it will ſometimes be otherwiſe in a figure in a ſitting poſture.

16. And as the garments of a ſtanding figure, if in the open air, are liable to be driven by the wind, therefore they muſt be plac'd one way.

17. Take care alſo not to make folds, where the garments ſhould ſit ſtreight and cloſe, as on the breaſts, knees, thighs, *&c.* which bear them out, and for that reaſon ought alſo to ſit plain in ſuch places.

For Colours for Drapery, &c.

For a bright red, temper *Indian lake* with native *cinnabar.*

For ſcarlet, temper *carmine,* and deepen it with *Indian lake*; or temper native *cinnabar,* and a little *red-lead,* and ſhadow it with *Indian-lake.*

For carnation, temper *lake* and *white,* and ſhadow it with *lake.*

For crimſon, temper *cinnabar, lake,* and *white,* and deepen with *lake.*

For a peach colour, temper *carmine* and a little *white,* and ſhadow or deepen it with *lake.*

For a violet, temper fine *Dutch bice* with *lake,* and deepen it with *indigo.*

Note, *That* Indian lake *is the beſt of all other* lakes; *but it being very ſcarce and dear, you may do well enough with* Florence lake *inſtead of it.*

For an orange, mix the beſt *red lead,* and a little fine yellow *maſticote,* and ſhadow it with *gall-ſtone* and *lake.*

For an orange tawney, mix *cinnabar* and light *pink* with a little yellow *maſticote,* and ſhadow with *gall-ſtone* and *lake.*

For a ſtraw colour, temper yellow *maſticote* with a very little *cinnabar*, and deepen with dark *pink*.

For a sky, mix *ultramarine* with a little *white*, and deepen with *indigo*.

For a purple, mix fine *Dutch bice* and *lake* and a little *white*, and deepen it with *lake* and *indigo*.

Note, *That as to all colours where* Dutch bice *is us'd, you ſhould make choice of that which is fine, or elſe you will find that in working it will lie very rough and uneven, and not cover well.*

For a ſea-green, mix *bice*, *pink*, and *white*; and deepen it with green *pink*.

For a French green, mix one part of light *pink*, with 6 parts of *Dutch bice*, and deepen with green *pink*.

For a poppinjay, temper *pink* and a little *indigo*, and deepen it with *indigo*.

For an aſh-colour, mix *cherry-ſtone* and *white*, and deepen with *ivory-black*.

For a lion tawney, mix *red-lead* and *maſticate*, and deepen it with *umber*.

N. B. *Take a ſpecial care, that when you temper or mix any of theſe colours for either a* complexion *or* garment, *that you temper them on your pallet or ſhell with your finger; and mix them all very well to make a good mixture, and not too wateriſh.*

Alſo be ſure to preſerve all your colours from duſt, and before you temper either in the ſhell, or upon your pallet, to bruſh it off with a large pencil, or hare's foot, or to blow it off.

1. In *ſhadowing linnen,* uſe black, white, a little yellow, and leſs blue; deepen the *black* with burnt *ivory*, mix'd with a little *lake* and *indigo*, or *litmoſe* blue. For a greater variety of colours, *ſee the article* DRAPERY, *&c.*

2. As for *ſattins* and ſilks, and all other ſhining ſtuffs, they ought to have certain bright reflections, exceeding bright, with ſudden light glances, eſpecially in ſuch places, where the ſtrongeſt and brighteſt lights fall; and ſo by how much the garment falls the more inward from the light, by ſo much the reflections will be the leſs bright.

3. If the body drawn be in armour, if of ſilver, lay *liquid ſilver* all over for a ground, which let dry well, and then burniſh it, and ſhadow it with *ſilver indigo*, *litmoſe*, and *umber*, according as the life ſhall direct you.

4. If the *armour* be of *gold*, lay the ground with *liquid gold*, as you did with *ſilver*, and ſhadow upon it with *lake*, *Engliſh oaker*, and a little *gold*; or thus,

5. Lay the fineſt *ſhell-gold* flat and ſmooth, on the place where the armour is repreſented; which when it is thoroughly dry,

burniſh all over with a ſmall *weeſel*'s or *dog*'s tooth, ſet it into the end of a pencil-ſtick, but ſomething longer.

6. For ſhadowing, temper *lake*, *Roman-oaker*, and *gall-ſtone*, with a little *ſhell-gold*

7. The heightenings being burniſhed, are to be left bright.

8. In the fainter parts of the ſhadows, uſe a little *ſhell-gold*, and alſo in the deepeſt, which muſt be neatly and ſweetly wrought into the *gold*.

9. Alſo temper *gall-ſtone* with *ſhell-gold*, and this will give an excellent luſtre to all gold works.

10. Mix a little *black* in the darkeſt and deepeſt ſhadows, and the heightenings are only the firſt *gold* burniſh'd bright.

11. As in armour, ſo alſo in braſs-pots or kettles, or any glittering metal, where you ſee a ſudden brightneſs in the middle or centre of light, from the ſhining quality and diſpoſition of thoſe things, by ſo much the reflections will be leſs bright, and on the contrary.

Chaſed, emboſſed, or ſhining Armour. 1. The lighter places of it muſt be moſt ſparkling, which may be expreſs'd by raiſing the high and round places, with a temper of *gall-ſtone* and *Roman oaker*; by touching with a pencil full of the colour over and over, in one and the ſame place, 'till the touches be rais'd over the other work.

2. Then cover over the rais'd work with the fineſt *ſhell-gold* (that is made at *Antwerp*) and burniſh it with a weeſel's tooth; and do the like, if it be ſilver emboſs'd.

3. As for *ſilver armour*, lay on *ſhell-ſilver*, as directed for *ſhell-gold*; and when it is dry, burniſh it as you do the *gold*.

4. *As for ſhadowing it*, temper *lake* and *indigo* with a very little *umber*, work all the ſhadows down even and ſmooth, according to the appearance in the life.

5. As to the *heightenings*, they are to be left to the ſilver (that having been brightly burniſhed) as in the gold. The thinner part of the ſhadows, being part of the depth of the ſhadows, muſt be temper'd with a little *ſhell-ſilver*, and wrought ſweetly and neatly into the *ſilver*, being laid very flat and even, as has been ſaid before.

6. A very good ſhadow for *emboſs'd ſilver*, are *burnt cherry-ſtone*, *dark pink*, and *ruſt of iron*; as alſo are *ivory black*, mix'd with *dark pink*.

1. *For diamonds*, lay a ground of *liquid ſilver*, and deepen it with *cherry-ſtone black*; the deeper the ſhadow, the fairer the diamond.

2. *For emeralds*, or any *green-ſtone*, mix *turpentine* with *verdigreaſe*, and a little *turmerick* root, firſt ſcrap'd with vinegar, drying it, and then grind it to fine powder, and mix it.

3. *For Pearls*, let your ground be *indigo* and *white*; the ſhadows *black* and *pink*: To expreſs the roundneſs and luſtre of the *pearl*, ſhadow it with *indigo*, *Cherry-ſtone black*, and *pink*.

Or you may lay the *pearl* with *white*, mix'd with a little *black*, a little *indigo* and *maſtick*; but very little in compariſon of the *white*; ſcarcely to the hundredth part: when this is dry, give the light of the *pearl* with a little *ſilver*, ſomewhat more to the light than the ſhadowed ſide. Then take a *white*, allay'd with *maſticote*, and give it a compaſſing ſtroke underneath the ſhadowed ſide, which ſhews a reflection; afterwards, without that a ſmall ſhadow of ſea-coal undermoſt of all; but mind this, your *ſilver* muſt be laid round and full.

4. *For rubies*, firſt lay a ground of *ſilver*, to the bigneſs of a *ruby*, burniſh it; then heating a ſmall wire in a candle, with it drop upon the burniſh'd place a little pure *turpentine*, tempered with *Indian lake*, and faſhion it, as you pleaſe, with your inſtruments; let it lie a day or two to dry, and if it does not dry ſoon enough, add to the compoſition a little powder of *maſtick*.

5. *For ſapphires*, temper up *ultramarine* with pure *turpentine*, which lay upon a ground of *liquid ſilver* poliſh'd; which muſt be the ground for all ſtones.

Of LIMNING LANDSKIP.

All the various expreſſions of *landskip* are innumerable, there being as many as there are painters and fancies, and therefore not to be compriz'd within rules. But for the general, obſerve theſe which follow.

1. Always begin with the sky, ſun-beams, or lighteſt parts firſt; next, thoſe beams that are yellowiſh (which make of *maſticote* and *white*;) next, the *blueneſs* of the sky, (which make with *ultramarine* or *ſmalt* alone) and mix *lake* and *white* for purple clouds.

2. At the firſt working lay the piece all over with dead colour, leaving no part of the ground uncoloured; but take care to lay the colours ſmooth and even.

3. Work your sky downwards towards the horizon fainter and fainter, as it draws nearer and nearer the earth, except in tempeſtuous skies; work the tops of mountains far remote, ſo faint that they may appear loſt in the air.

4. Make low places, and ſuch as are near the ground, of the colour of the earth, of a *dark yellowiſh* or *brown*, or *green*; the next to them of a lighter *green*; and ſo ſucceſſively as they loſe in diſtance, ſo make them abate in colour.

5. Do not make any thing that appears at a diſtance perfect by expreſſing any particular ſigns or tokens, that it has; but expreſs it as weakly and faintly, as it appears to the eye.

6

6. Always place light againſt dark, and dark againſt light; by which means you may extend the proſpect as tho' very far off.

7. Let all the ſhadows loſe their force as they remove from the eye; always making the ſtrongeſt ſhadows the neareſt to hand.

8. Laſtly, Boil an ounce of iſing-glaſs in ſmall pieces in 4 quarts of conduit-water, till the iſing-glaſs is diſſolved, and ſet it by for uſe: with this, mix ſpirit, or oil of *cloves*, *roſes*, *cinnamon*, or *ambergreaſe*, and lay it on and about the picture, where it is not coloured (leſt it ſhould change the colours; but upon the colours uſe it without the perfumes) ſo it will varniſh your pictures, and give them a gloſs, and cauſe them to retain the beauty and luſtre of their colours; and alſo take away any ill ſcent which they may otherwiſe have.

9. For trees, you muſt have a *dark green*, which you may make by mixing *verditer* with *pink* and *indico*; the deepeſt ſhadows of all in green, are made with *ſap-green*, and *indico*.

To preſerve colours in Limning. Temper a ſhell of *white* with a few drops of *roſemary*-water doubly diſtilled, or pure ſpirit of *roſemary*; and however dead and faded the picture was before, it will inſtantly become perfect white.

This water or ſpirit, alſo prevents the bubbles in *white* and *umber*, which are troubleſome in grinding.

The ſum of the Obſervations *of* LIMNING *to the life in general.*

1. Let your table be prepared very exactly, as before directed.

2. Let the ground be of a fleſh colour, tempering it to the complexion to be painted.

3. If it be a fair complexion, mix a good quantity of *red* and *white-lead* together ſomething thick.

4. If the complexion be ſwarthy, or brown, mix with the former a little fine maſticote, or *Engliſh-oaker*, or both; always taking care that your ground be fairer than your complexion painted.

For fairneſs may be ſhadowed or darkened at pleaſure; but if it be ſad or dark, you can never heighten it: for in limning, the picture is always wrought down to its exact colour.

5. Lay the ground upon the card or tablet with a larger pencil than ordinary, free from ſpots, ſcratches of the pencil, or duſt, and as even as poſſibly can be; and let the colour be rather thin and wateriſh than too thick; doing it very quick and nimbly, with two or three daſhes of the pencil.

6. When you have done this, prepare your ſhadows in order, as before directed.

7. Then draw the out-lines of the face with lake and white mingled together very fine; ſo that if you ſhould err in your firſt draught, you may draw it true with a ſtronger ſtroke; the other line, by reaſon of its faintneſs, being no hindrance.

Theſe lines muſt be drawn, truly ſharp and neat, with the greateſt exactneſs imaginable.

8. Take particular notice of the moſt remarkable and deep ſhadows, which retain in your memory, when you go over them with greater exactneſs; and (if you pleaſe) you may alſo draw the ſhape of that body, which is next to the face, *viz.* a little beneath the ſhoulders, with a ſtrong and dark colour; which, in caſe of miſtake as to proportion, may be eaſily altered.

9. The firſt ſitting is employed in dead-colouring the face; the ſecond, in the exact colouring and obſervation of the ſeveral ſhadows, graces, beauties or deformities, as they are in nature; the third ſitting is to render ſmooth what was before left rough and rude, cloathing what was naked, and giving ſtrong and deepening touches to every reſpective ſhadow.

10. The dead colour is made as follows:

Take of the aforeſaid ground, at article 3. and 4, and mix it with fine red-lead, tempering it exactly to a dead colour in the cheeks and lips; taking an eſpecial care not to make it too deep, which, if it be too light, you may deepen at pleaſure.

11. The face is to be firſt begun to be coloured in the cheeks and lips, and ſomething ſtrongly at the bottom of the chin (if it has no beard); alſo over, under, and about the eyes, with a faint redneſs.

12. The ear is moſt commonly reddiſh; as alſo ſometimes the roots of the hair.

13. When you have waſhed over the ground with this reddiſh or dead-colour, then ſhadow as well bold and ſtrong as exact and curious.

14. A good picture, if it be only dead-coloured, and appearing near at hand to be very rough, uneven and unpleaſant; yet being done and ſhadowed boldly and ſtrongly, will appear very ſmooth, delicate, and neat, if it be viewed at a proper diſtance from the eye.

15. Therefore, curioſity and neatneſs of colour is not ſo much to be regarded, as bold, lofty, and ſtrong expreſſion of what is ſeen in the life.

16. The next thing you have to do, is, to uſe the faint blues about the corners and balls of the eyes and temples, which

are to be wrought out exceeding ſweetly and faintly by degrees.

17. You muſt be ſure to make the hard ſhadows fall on the dark ſide of the face, under the noſe, chin, and eye-brows, as the light falls with ſomewhat ſtrong touches.

18. When you have done, and ſmoothed the light ſhadows, in the next place work the hair into ſuch forms, curlings, and diſpoſitions as will beſt ſet off the piece.

19. Firſt draw it with colours, neatly and to the life; then waſh it roughly, as the reſt; and in the next place compleat it: filling up the empty places with colour, and the partings of it with blue.

20. And whenever you would have your colours or ſhadows deep, and bold, be ſure that you work them by degrees, beginning faintly, and increaſing in ſtrength.

21. Firſt uſe the former colours in the ſame places again, driving and ſweetening one into another, that no part may appear uneven, or with an edge or patch of colour; but all together equally mixed and diſperſed, lying ſoft and ſmooth, like ſmoke or vapours.

22. When you have done this for an hour or two, then lay the ground for behind the picture of *blue*, or crimſon, like to a ſattin or velvet curtain.

23. If you make it *blue*, do it with *bice*, well tempered in a ſhell: firſt drawing the out-lines with the ſame colour, and with a ſmall pencil; and afterwards waſh over the whole ground with a larger pencil with a thin, wateriſh *blue*.

24. And in the laſt place, cover the ſame that you waſhed over before with a thicker colour, briskly; that it do not dry before all be covered, ſo will it lie ſmooth and even.

25. If the back ground be *crimſon*, do it with *Indian lake*, in thoſe places where the ſtrong lights and high reflections fall, and do the light with thin wateriſh *lake*, and deepen with a thicker colour the ſtrong ſhadows that are cloſe by the light; which being done, the picture will be very much altered; for the beauty of theſe grounds will much darken and deaden it.

26. Then do over the apparel with ſuitable colours only flat, with heightening and deepening; and then go over the face again, and with a ſharp and curious pencil reduce the ſhadows to ſmoothneſs and neatneſs; drawing the eyes, the lines of the eye-lids; the redneſs of the noſtrils; ſhadow of the ears; deepneſs of the eye-brows, and the reſt of the other remarkable marks of the face.

27. Sweetening the out-lines of the face (by darkening the ground from above the light ſide, and below on the dark ſide) that when the piece is done, the ground may ſtand as it were

at a diſtance from the face behind; and that the face may appear to ſtand off forward from the ground.

28. In the next place, go over the hair, make it light or deep, according to the life: and in apparel make the ſeveral folds and ſhadows, and what elſe is to be imitated, as it is in the life itſelf; lightening the lines with the pureſt *white*, a little *yellow*, and ſome *blue*; and deepening with *ivory black*, and heightening with black, mixed with a little *lake* or *indico.*

29. When you have done this, and the perſon is gone, and the work is yet rough, poliſh it by your ſelf, and labour to make it ſmooth and pleaſant, filling up the empty places, and ſweetning the ſhadows which yet lie uneven and hard.

30. Having finiſhed the apparel, hair, and ground, next give ſtrong touches for the rounding of the face, and conſider, and add whatſoever may conduce to reſemblance and likeneſs; as moles, ſmilings, or glances of the eyes, motion of the mouth, *&c.*

31. For which purpoſe you may find occaſion of diſcourſe, or cauſe the perſon to be in action, and to look merrily and chearfully.

32. Remember, that the eyes give the life; the noſe the favour; the mouth the likeneſs, and the chin the grace.

33. If you make the lightening of a fair-coloured drapery with fine ſhell-gold, it will add an admirable luſtre, and be a ſingular ornament to the picture; and if this gold be mixed with the very ground itſelf, the apparel will appear much the fairer.

The dead-colouring of a whole figure deſigned for hiſtorical LIMNING.

This is performed two ways:

1. By tempering a *fleſh-colour* ſomewhat lighter than you deſign it ſhall be, after it is wrought down by the variety of *ſhadowing mixtures*, which fleſh colour, you muſt temper in a large ſhell, becauſe it requires a quantity; and the mixture muſt be good, neither too thick nor too thin.

2. Then, having taken a good gooſe-quill pencil full of the colour, lay it on the place where you deſign the figure, quick, even, and ſmooth; if you be not very briſk in laying it on, it will not lie even.

3. The other method is this; you may uſe the beſt flake white, well prepared, inſtead of *fleſh-colour*, and lay it on with the ſame ſized pencil as before mentioned, and ſo your dead-colour is as the oil-painters do, which muſt be done free, rough and boldeſt of all.

4. But take notice, that all the out-lines of your figure are firſt drawn with a *temperature* of *flake* and *white*, before the

ground-colour for the fleſh is laid on: Alſo in dead-colouring the ſhadows which are next to the light muſt not be left too dark, harſh or hard, but faint, even and miſty.

5. When you have done this, mix flake-white and a little red-lead, and with that touch up all the deep places both in face and body, as your judgment ſhall direct.

6. Let this be done exceeding faintly, becauſe if it be laid too deep it cannot be heightened up again, without running the hazard of ſpoiling it; whereas if it be too light it may be deepened gradually as you pleaſe.

7. Make in the face a delicate faintneſs, or faint red, inclining to a purple under the eyes; then with the aforeſaid mixture touch the tips of the ears, as alſo the cheeks, lips, and bottom of the chin, and ſo proceed to the ſole of the foot, touching with the glowing colour in all the following muſcles and places.

8. Then for the general yellowiſh, glowing ſhadows, mix *gall-ſtone and pink*, and add in ſome places a *little lake*, to the former mixture or temperature.

9. And whereas you will perceive in ſome parts of the body in the Life a faint *bluiſh*, this may be expreſſed with a temperature or mixture of *Indigo and White*; and thus you are to proceed, according to the ſubject you paint after, whether the life, or copying after painting.

10. All theſe Strokes are to be expreſſed after the manner of hatching with a pen, waſhing it along with gentle and faint ſtrokes.

11. But be ſure to take care in this dead-colouring, to cover your ground-colour, with the aforeſaid red and other ſhadows.

12. You need not be over curious in the firſt working; but rather aim at a good, free, and bold imitation of nature, than an extreme neat, ſet, or ſtiff way.

13. Be not diſcouraged at the roughneſs of your colour; for you may work that down, and touch it by degrees with the other ſhadows, tho' you do not do it at the firſt.

14. After this, ſweeten and heighten your ſhadows by degrees, according as the light falls.

15. Then touch it in ſome places with ſtrong touches, and bring your work up together in theſe places to an equal roundneſs and ſtrength; not finiſhing any part of the figure before the other; but viewing and working all the parts, curiouſly alike; but yet in a manner, as it were at random.

16. Then take notice of the rounding, colouring, and ſhadowing, or whatever elſe is requiſite to the perfection of the work.

17. The fainter ſhadows being done, ſweeten and work them into the red ſtill.

18. View over attentively all the variety of colouring; and nicely delineate with your pencil thoſe ſeveral varieties of nature, which were but rudely trac'd out before.

19. In doing this, uſe the ſame colour in the ſame places you had us'd before, working, driving, and ſweetning the ſame colours one into another, that nothing be left in the piece with a harſh edge, uneven, or in a lump, but make all appear ſweet, or driven one into another with the point of ſomewhat a ſharper pencil than that which you us'd at firſt, ſo that the ſhadows may lie diſpers'd, ſoft, ſweet, ſmooth, and gently extended one into another, like air.

20. In the laſt place, take notice that skies, water-trees, plants, flowers, and ground, are all to be dead-coloured before the figures.

LINEAMENT is a fine ſtroke or line, obſerv'd in a human face, and that forms the delicacy thereof, being that which preſerves the reſemblance thereof, and occaſions the relation of likeneſs or unlikeneſs to any other face.

It is by theſe, that Phyſiognomiſts pretend to judge of the temper and manners of people.

Painters uſe the word *Lineament* for the out-lines of a face.

LINNENS [in miniature] are painted thus; having drawn your folds, as when you do drapery, lay on *white* all over, and then proceed and finiſh with a mixture of ***ultramarine***, ***black***, and *white*, taking more or leſs of this laſt according to the degrees you want of light and ſhade; and for the deepeſt folds, take *biſtre* and a little *white*, uſing it ſparingly, and with artful touches; and you may even take the former pure for the deepeſt ſhades, where you muſt expreſs the folds, and loſe them among the reſt.

They may be made after a different manner, by laying on all over a very pale mixture of ***ultramarine***, ***black***, and *white*, and then proceding in the manner above-directed with the ſame mixture, but a little deeper: And when the ſhades are ſtriped and finiſhed, you muſt heighten the lights with pure *white*, blending them with the firſt colour or ground. But of what ſort ſoever you make them, when you finiſh them, prepare ſome yellowiſh tints for certain places, laying them on ſo lightly, as it were a waſh, ſo as to be tranſparent, and neither to hide the ſtriping nor the ſhades.

Yellow linnens are made of *white*, mixed with a little ***oaker***, then proceed and finiſh with *biſtre*, mixed with *white* and ***oaker***, and for the deepeſt ſhades with *biſtre* alone. Before you finiſh, lay on tints of *oaker* and *white* here and there, and others of *white* and *ultramarine*, as well upon the ſhades as lights, but very thin, and then ſtipple and ſcumble the whole together, and it will have a fine effect; as you finiſh, touch up the extremities of the lights with *maſticote* and *white*. Theſe linnens and the former, you may ſtripe like *Egyptian* ſcarves, with blue, red, *ultramarine*, and *carmine*, a *red* one between two *blue* ones, very bright on the lights, and ſtronger in the ſhades. The heads of virgins are generally dreſſed with veils of this ſort; and of the ſame are made a ſort of handkerchiefs for an open breaſt, becauſe they are very becoming to the fleſh.

When you would have either the one or the other of them to be tranſparent, and ſhew whatever, whether ſtuff or fleſh, is underneath, lay them on, at firſt very thin, and mingle with your ſhading colour, a little of that which is under them, particularly at the extremities of the ſhades, and touch only the extremities of the lights (only for the *yellows*) with *maſticote* and *white*, and of the *whites* with *white* alone.

They are alſo to be made another way, eſpecially when you would have them quite tranſparent, as muſlin, lawn, or gauſe, for this purpoſe you muſt begin and finiſh, what is beneath, as if nothing was to be over it; then heighten the brighteſt folds with *white* or *maſticote*, and ſhade with *biſtre*, and *white* or *black*, or *blue* and *white*, according to the colour you aim at; and taking away from the livelineſs of the reſt by foiling it over, tho' that be not altogether neceſſary but for the darkeſt parts.

To take iron-moulds or ſtains out of Linnen.

Take the juice of a *lemon*, warm it with a little powder of *alum* diſſolved in it, wet it, and as it is wet, dry it with a ſpoon, wherein is a live coal; continue to do ſo for the ſpace of two hours, and the ſpot or iron-mould will in a waſhing or two diſappear. This will take out ſpots of *ink*, &c.

An excellent way to take ſpots or ſtains out of Linnen.

Take powder of burnt bone finely ſifted, and place it between 2 boards, preſſing it hard, with ſome of the powder on either ſide the ſpot, and in 2 days it will be quite vaniſhed.

Another excellent way to take ſpots or ſtains out of Linnen.

Diſſolve *bay-ſalt* in fair water, and ſteep the linnen in it, then take juice of *ſorrel* and ſharp vinegar, and rub the ſpot with them, ſuffering it likewiſe to ſoak in, and in ſo doing often it will diſappear.

To take away ink, ſtains, ſtains with fruit, &c.

Take powder of *alum* half an ounce, juice of *houſleek*, or *ſengreen* 2 ounces, and apply them after the *alum* has been diſſolv'd very hot, and the buſineſs will be done.

How to keep Linnen *laid up without uſing, from damage many years.*

The linnen having been waſh'd, and well-dry'd in the ſun, fold it up, and ſcatter in the folding the powder of *cedar*-wood, or *cedar* ſmall ground, having firſt perfum'd the cheſt with *ſtorax*, by which means not only dampneſs is prevented, but worms and moths.

A pleaſant water to preſerve Linnen, *or any other thing a long time, giving it moreover a curious ſcent.*

Take of *ſpike-flowers* 1 pound, *coſtmary* half a pound, *palm* a ſmall handful, *penny-royal* the ſame quantity, *mace* an ounce, *orrace* powder half an ounce, ſoak theſe in white-wine, and diſtil them, and ſprinkle your clothes in a fair day, let them be thoroughly dry, and then lay them up.

To remove ſtains occaſion'd by wine or vinegar.

Steep the thing ſtained in *new milk* for a night, then apply *rennet* to the ſtain, rubbing it in, and by ſo doing twice or thrice, you will find it as fair as it was at firſt.

To make Linnen *that is turn'd yellow very white.*

Heat *milk* over the fire, and add to a gallon a pound of *cake ſoap* ſcraped in, ſo that it may diſſolve; and when the clothes have boiled therein, take them out, and clap them into a lather of hot water, and waſh them out ſpeedily.

To whiten cloth the beſt way.

Buck your cloth well, and ſpread it upon the graſs, and ſprinkle it with *alum*-water, letting it lie abroad for 2 or 3 days and nights; then buck it again with *ſoap* and *fuller's earth*, and uſe it as before, and it will be both thick and white.

To make any Linnen *at the firſt appearance look like diaper.*

When it has been new waſh'd, ſpread it upon a table, ſomewhat damp, and ſprinkle it over with a bruſh dipt in *alum* and *roſe*-water, in form and manner as ſhall beſt ſuit your fancy.

To DYE LINNEN *with crampenade.*

To every 3 ells of *linnen* uſe 1 pound of *crampenade*, and 6 quarts of water; ſet it over a fire 'till it begins to ſeeth, then put in 2 ounces of *galls*, and afterwards your *linnen*; then take it out often, and wring it, and put it into *alum* water: but if you would have the colour darker, you ought to have a lye of unſlak'd lime or chalk-ſtones.

To dye LINNEN *thread or cloth, a good* RED.

Soak a pound of *ſamfleur* 24 hours in 2 gallons of water, heating it over a gentle fire; then add half a pound of raſp'd *Brazil*, 2 ounces of *vermilion*, and an ounce of *alum* diſſolv'd in fair water, dip the *linnen*, and order it as other things.

To take ſpots out of LINNEN.

To 2 ſpoonfuls of the juice of *onion*, add as much *lime-juice*, wet the linnen 2 or 3 times, drying it as often by the fire; waſh it out immediately in a good lather, and it will be done.

How to thicken LINNEN *cloth for ſkreens*, &c.

Grind *whiting* with *ſize*, and to prevent its cracking add a little *honey* to it; then lay it upon the cloth with a ſoft and ſmooth bruſh, 2 or 3 times, ſuffering it to dry betwixt each time; and for the laſt laying, ſmooth it over with *Spaniſh white*, laid with *linſeed oil*, the *oil* being firſt heated and mix'd with a ſmall quantity of *litharge of gold*, to prepare it for the better enduring the weather, and by thus doing it will be laſting.

How to make SPANISH WHITE.

Grind *white chalk* with a tenth part of *alum* with fair water, 'till it is very ſoft, and afterwards bring them to a thickneſs, and make them into balls, lay them ſo that they may dry leiſurely; then when you uſe them, heat them well in the fire.

LINSEED, a grain that has ſeveral uſeful properties, and yields by expreſſion an oil, that has moſt of the qualities of nut-oil, and is accordingly often us'd inſtead of it in painting.

LITHARGE is of two kinds; the one *natural*, the other *artificial*.

Natural Litharge is a mineral ſometimes found in lead-mines, reddiſh, ſcaly, brittle, and ſomewhat reſembling *white lead*.

This *Litharge* is ſo exceeding rare, that the ſhops ſell none but the *artificial*.

Artificial Litharge is of two kinds, *viz.* that of *gold*, and that of *ſilver*; or it is rather the ſame, with this difference, that the one having undergone a greater degree of fire than the other, has had different colours given it, and thence have proceeded the different names.

As to the *artificial Litharge*, authors do not agree as to what it is; ſome ſay it is a metallic ſcum rais'd on the ſurface of lead, when melted, having ſerv'd to purify *gold*, *ſilver*, or *copper*.

Others ſay it is a metallick ſmoak ariſing from thoſe metals mix'd with the lead, us'd in purifying them; which ſticking to the tops of chimneys in furnaces, is there form'd into a kind of ſcales.

Again others ſay, it is the lead itſelf, us'd in the refining of thoſe metals, and eſpecially copper; which laſt opinion appears the moſt likely, by reaſon of the great quantities of theſe *Litharges*, brought from *Poland*, *Sweden*, and *Denmark*, where *copper-mines* are more frequent than thoſe of *gold* and *ſilver*.

LIVER-WORT *the plant to paint*, &c.

LIVER-WORT is ſometimes red, and ſometimes blue; as for the latter, let it be covered all over with *ultramarine*, *white*, and a little *carmine*, or *lake*; ſhade the inſide of the leaves with this mixture; but let it be deeper except for the outermoſt, for which and the outſide of all, add ſome *indigo* and *white* to deaden the colour.

For the *red*; do that over with *columbine lake* and *white*, very pale, and finiſh with leſs *white*.

As for the *green* uſe *verditer*, *maſticote*, and a little *biſtre*; ſhade with *Iris* and a little *biſtre*, but chiefly for the outſide of the leaves.

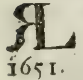
LIXIVIUM is a liquor made by the infuſion of wood aſhes, or any burnt ſubſtances, which is more or leſs penetrating, as it is more or leſs impregnated, with ſalts and fiery particles, abounding therein. That which is left after the evaporation of ſuch a liquor, is call'd a *Lixivial*, or *Lixiviate ſalt*; ſuch as all thoſe are that are made by *incineration*.

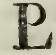
Lixiviums are of notable uſe in extracting tinctures of vegetables for dying, ſtaining, or painting colours.

L. K. A. ſignifies *Luke Kilian* of *Auguſta*, engrav'd *Tintoret's* and *Spranger's* works.

L. } ſignifies *Lambert*, *Lombard*, or *Suſterman*, or *Suavius*,
L. L. } all which ſignify the ſame perſon.
L. S. }

L. L. } ſtand for *Lorenzi Lolli Guido Reni's* ſcholar.
Lollius }


RENE or RENATO LOCHON made this mark under ſeveral portraits and works of *Polidore*, in the year 1651.


PETER LOMBARDI, who engrav'd the works of Monſieur *Sampagna* us'd this mark.

LOOKING GLASS.

The method of working PLATE *or* LOOKING-GLASS.

The matter of which *Looking-Glaſſes* are made, is much the ame as that of other glaſs-works, *viz.* an *alkali* ſalt and ſand.

But this ſalt ought not to be extracted from *polverine*, or the aſhes of the *Syrian kali*; but that of *Barillia*, or the aſhes of a plant of that nature, of the genus or ſame kind of *kali's*, as that which grows about *Alicant* in *Spain*.

It is indeed very rare for us to procure the *Barillia* pure; the *Spaniards* commonly mixing another herb with it in burning it, which alters the quality of it; or elſe they add ſand to it to augment its weight.

This may be eaſily diſcovered, if the addition be not made, 'till after the boiling of the aſhes; but if it be done in the boiling of them, it is impoſſible to diſcover it.

This adulteration of the matter is the cauſe of thoſe threads and other defects that appear in plate-glaſs.

The manner of preparing this ſalt, is the cleanſing it well from all foreign matters; pounding or grinding it with a kind of mill, and ſifting it pretty fine.

The ſand muſt be ſifted and waſh'd ſo often, 'till the water that comes from it is very clear; then it is to be dried again, and mixt with the ſalt, and the mixture paſs'd through another ſieve.

When this has been done, the mixture is put into the annealing furnace for about 2 hours; in which time it becomes very light and white; and being in this ſtate it is call'd *frit* or *fritta*, which muſt be laid up in a clean dry place, for a year at leaſt, or more, to give the materials ſufficient time to incorporate.

When this *frit* is to be us'd, it is laid ſome hours in the furnace, and the fragments or ſhards of old and ill-made *glaſſes* are to be added to ſome of it, theſe ſhards having been firſt calcin'd, by being heated red-hot in the furnace, and afterwards caſt into cold water.

Manganeſe (which ſee) muſt alſo be added to this mixture, to promote the fuſion and purification of it.

The method of blowing LOOKING-GLASS-PLATES.

The work-houſe furnaces and utenſils, you will find under the article *furnaces*, or in the following pages.

The melting-pots, in which the fore-mentioned materials or mixture is fus'd, are in height about 35 inches, and in diameter 38. *See the plate.*

Theſe materials being vitrified or melted into glaſs by the heat of the fire, and ſufficiently refin'd, the operation is perform'd in the following manner;

The maſter-workman dips his blowing iron into it, once or often, 'till ~~he~~ has gotten matter upon it ſufficient for the ſize of the plate he is to make.

Then he ſteps up on a kind of block or ſtool, about 5 foot high, that he may have the more liberty or room to ballance it, as it lengthens in the blowing.

If the matter on the iron be too heavy for the workman to ſuſtain on his blowing iron, he is aſſiſted by 2 or more attendants, who hold pieces of wood under the glaſs, to prevent it from falling off the iron, by reaſon of its own weight.

The glaſs has thus ſeveral repeated heatings and blowings given it, 'till it be at length brought to the compaſs proper for its thickneſs, and the quantity of metal taken out; after which it is cut off with forceps, at the end oppoſite to the iron, in order to *point* it with the *pointil.*

The *pointil* is a long firm piece of *iron*, having a piece going a-croſs one of its ends, in the form of a T; in order to point the glaſs, the head of the T is plunged into the melting pot, and with the liquid glaſs that comes out ſticking to it, they faſten it to the end of the glaſs before cut off.

Having faſtened it ſufficiently, they ſeparate the other end of the glaſs from the blowing iron, and inſtead of that make uſe of the *pointil* to carry it to the furnaces, fitted for that purpoſe, where they continue to enlarge it, by ſeveral repeated heatings, 'till it is of an equal thickneſs in every part.

Having done this, they cut it open with the forceps, not only on the ſide by which it ſtuck to the blowing iron, but alſo the whole length of the cylinder: and when they give it a ſufficient heating, it is in a condition to be entirely opened, extended, and flattened.

The manner of doing which is the ſame as for table glaſs. *See the article* GLASS.

The glaſs having been ſufficiently flatted, is ſet into the annealing furnace for 10 or 15 days, according to its ſize and thickneſs.

Looking-Glaſſes thus blown, ought never to be more than 45, or at moſt 50 inches in length, and proportionable in breadth. Thoſe which exceed theſe dimenſions, as has been frequently experienced in thoſe of the *Venetian* make, cannot have a thickneſs ſufficient to bear the grinding, and beſides are ſubject to warp, which cauſes them to be falſe, hindering them from regularly reflecting the objects.

The method of caſting or running large LOOKING-GLASS PLATES.

When the matter has been ſufficiently vitrified (*ſee the article* FURNACES) refin'd and ſettled, which is commonly in about 24 hours; they fill the ciſterns, which are in the ſame furnace, and which is left there about 6 hours more, 'till ſuch time as it appears all white, by means of the exceſſive heat.

To get the ciſterns with the metal out of the furnace, they uſe a large iron chain, which opens and ſhuts with hooks and eyes; from the middle of which, on each ſide, ariſe 2 maſſive iron pins, by which, with the help of pullies, the ciſterns are rais'd on a kind of carriage, of a proper height, and are thus brought to the table, where the glaſs is to be run.

Then ſlipping off the bottom of the ciſtern, a torrent of fiery matter ruſhes forth, and preſently covers the table prepar'd for that purpoſe.

This table, on which the glaſs is to be run, is made of pot-metal, in length about 9 foot, and proportionable in breadth. It is ſupported on a wooden frame with truckles for the conveniency of removing from one *Carquaſſe*, or annealing furnace, to another, in proportion as they are fill'd.

For forming the thickneſs of a glaſs, there are 2 iron rulers or rims, placed around the edge of the table, and on theſe reſt the 2 ends of a ſort of roller, which is us'd to drive the liquid matter before it to the end of the table or mould.

Theſe iron rulers are moveable, ſo that they may be ſet cloſer or further apart at pleaſure, and ſo determine the breadth of the glaſſes, and alſo keep in the liquid glaſs from running off at the edges. The glaſs being taken out of the annealing furnace, needs only to be *ground*, *poliſh'd*, and *foliated*, (*for which ſee* GRINDING, POLISHING, and FOLIATING.)

As ſoon as the liquid matter is come to the end of the table, and the glaſs is come to a conſiſtence, which will be in the ſpace of a minute; they ſhove it off into the annealing furnace, where it ſlides eaſy enough, by reaſon of the ſand ſtrew'd thereon.

That which is moſt ſurprizing throughout the whole operation, is the quickneſs and addreſs, wherewith ſuch maſſive ciſterns, full of ſuch flaming matter, are taken out of the furnace, convey'd to the table, pour'd on it, and the glaſs ſpread, *&c.* The whole is ſcarce conceivable to thoſe, who have not been eye-witneſſes of that ſurprizing manufacture.

As faſt as the ciſterns are emptied, they are carried back to the furnace, and freſh ones are taken out, and the liquid glaſs caſt on the table into other plates as before, as long as there are any full ciſterns; laying as many plates in each *carquaſſe* as it will hold, and ſtopping them up as ſoon as they are full; that ſo they may anneal and cool again, which will require at leaſt 10 days time.

After they have diſpatch'd the firſt running, they prepare another, by filling the ciſterns a-new with matter out of the pots: and ſo a ſecond, third, and fourth time, 'till the meltings pots are quite empty.

The ciſterns at each running ought to remain at leaſt 6 hours in the furnace, to whiten; and when the firſt annealing furnace is full, the caſting table is to be carried to another.

When the pots are emptied, they take them out, as well as the ciſterns, to ſcrape off what glaſs remains, which otherwiſe would grow green by continuing in the fire, and ſpoil the colour of the glaſſes. By this method we are not only enabled to make glaſſes of more than double the dimenſions of any made the *Venetian* way of blowing; but alſo can caſt all kinds of borders, mouldings, *&c.*

This art is ſaid to be of *French* invention, and not yet of 60 years ſtanding, being owing to the Sieur *Abraham Thevart*, who firſt propos'd it to the court of *France* in the year 1688; but has been conſiderably improv'd by our workmen in *England*.

The FURNACES *for caſting or running large* LOOKING-GLASS PLATES.

The furnaces for melting the materials for theſe large plates, are of an exceeding large ſize; and the annealing furnaces for annealing the glaſſes when form'd, are much larger than the other.

There are at leaſt 24 annealing furnaces, each from 20 to 25 foot long, round about the melting furnace they are called *carquaſſes*; and each *carquaſs* has 2 *tiſſarts* or apertures, to put in wood, and 2 chimneys. And beſides the annealing furnaces, there are others for making of *frit*, and calcining old pieces of glaſs.

All theſe furnaces are covered over with a large ſhed, under which there are alſo forges and work-houſes for carpenters, ſmiths, &c. who are continually employed in repairing and keeping up the machines, furnaces, &c. There are alſo lodges and apartments for theſe and the other workmen employed about the glaſs, and in keeping up a perpetual fire in the furnace.

The inſide of the furnaces are made of a ſort of earth, proper for ſuſtaining the action of the fire; and the melting pots, ciſterns, &c. are made of the ſame earth.

The furnaces ſeldom laſt above 3 years, after which they are to be rebuilt from bottom to top; and to keep them in good repair for that time, the inſide muſt be refitted every 6 months: the melting pots are as big as hogſheads, and contain above 2000 pounds of metal. The ciſterns are much ſmaller, theſe ſerve for conveying the liquid glaſs, which is drawn out of the pots to the caſting tables.

It is computed that a furnace, before it is brought into a ſtate fit to run glaſs, coſts above 3500 pounds: and that it will require 6 months to build one a-new; and 3 months to refit one. And that when a pot of matter burſts in the furnace, the loſs of matter and time amounts to above 250 pounds.

When a furnace is in a condition to receive the pots and ciſterns, it is heated red-hot: which being done, they fill the pots with the materials, which they do at 3 times, to facilitate the fuſion.

The manner of heating the large furnaces is ſingular enough, the perſon who is employed for that purpoſe, being ſtript quite naked to his ſhirt, runs round the furnace, without making the leaſt ſtop, with a ſpeed ſcarce inferior to the lighteſt courier: as he goes along, he takes up 2 billets or pieces of wood, cut for that purpoſe, which he throws into the firſt *tiſſart*, and continuing his courſe, does the ſame for the ſecond; this he continues to do, without interruption, for 6 hours ſucceſſively; after which another comes and relieves him.

It is ſurprizing, that 2 ſuch ſmall pieces of wood, and which are conſum'd in an inſtant, ſhould keep the furnace to the proper degree of heat; which is ſuch, that a large bar of iron, laid at one of the mouths of the furnace, becomes red-hot in leſs than half a minute.

LOQUACITY is repreſented [in *Painting*, &c.] by a young woman gaping, in a habit of changeable taffety, with crickets and tongues; a ſwallow on the crown of her head, going to chirp, and a magpye and a duck at her feet.

The magpye denotes prating, that offends the ears; the tongues alſo too much talkativeneſs; the ſwallow, on her head, that prating diſturbs the head of a quiet ſtudious perſon; the duck at her feet denotes much talkativeneſs.

JOHN LOTEN, was a *Hollander*, and a landskip-painter. He lived and painted many years here in a manner very *ſylvan*, like the *glades* and *ridings* of our parks in *England*.

He delighted particularly in open trees. His landskips are generally very large. He did many ſtorms at land, accompanied with ſhowers of rain, tearing up trees, daſhings of water, and water-falls, cattle running to ſhelter; which pieces were admirably good.

He painted alſo many views of the *Alps* in *Switzerland*, where he lived many years.

His works abound among us. He died in *London* about 53 years ago.

LOVE. When any thing is repreſented as good to us, that makes us to conceive a Love for it; and when it is repreſented as ill or hurtful to us, that excites our hatred.

Love then is an emotion of the ſoul, cauſed by motions which incite it voluntarily to join itſelf to ſuch objects as appear agreeable to it.

The motions of this paſſion, when it is ſimple, are very ſoft and ſimple; for the forehead will be ſmooth, the eye-brows will be a little elevated over the place where the eye-balls ſhall be turned.

The head inclined towards the object of the paſſion, the eyes may be moderately open, the white very lively and ſhining, and the eye-ball being gently turned towards the object, will appear a little ſparkling and elevated.

The noſe receives no alteration, nor any of the parts of the face; which being only filled with ſpirtis, that warm and enliven it, render the complexion more freſh and lively, and particularly the cheeks and lips; the mouth muſt be a little open, the corners a little turned up; the lips will appear moiſt, and this moiſtneſs may be cauſed by vapours ariſing from the heart. See the Plate.

But Love, like *hope* and *joy*, is a paſſion that produces no great motions in the body. *See the Figure in the Plate.*

Love, when it is ſimple, that is to ſay, not accompanied with any ſtrong joy, deſire, or grief, hath the pulſe regular, and much greater and ſtronger than ordinary.

One feels a gentle warmth in the breaſt, and the digeſtion of the aliments is made ſweetly in the ſtomach: ſo that this paſſion is profitable for health.

LOVE RECONCILED, is repreſented [in *Painting*, &c.] by a maid wearing a curious ſapphire about her neck; holding in one hand a cup, and two little *Cupids* in the other.

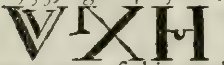
The ſapphire is of a celeſtial colour, has a virtue to reconcile, and precious ſtones commonly do ſo; the two *Cupids*, that the falling out of lovers is the renewing of love; they ſtriving which ſhould out-do each other, ſo that love becomes redoubled.

LOYALTY, is repreſented [in *Painting*, &c.] by a woman in a thin garment; in one hand holding a lighted lanthorn, on which ſhe gazes; in the other a mask, with many patches; ſtanding as if ſhe would fling it againſt a wall.

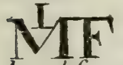
The thin raiment ſhews that the words of a loyal perſon ſhould be accompanied with ſincerity: the lanthorn, that a man ſhould be of the ſame quality within and without, as the lanthorn ſends out the ſame light as is within; the mask, her deſpiſing all feigning, double meaning and equivocation.

Lucas P R. ſignifies *Luke Renni* the *Roman*, *Raphael's* ſcholar.

LUCAS VAN LEYDEN, born in 1494, ſcholar of his father, and *Corn. Englebert*, lived in *Holland*, and the *Low-Countries*, excelled in hiſtory and engraving, died in the year 1533, aged 40 years.



This Mark is ſeen in ſome plates of LUCAS VAN LEYDEN, and the former part of this mark is under a St. *Veronica*, holding the holy ſhrowd.



MICHAEL of LUCCA, uſed this mark under a St. *Sebaſtian*, engraven after the manner of *Michelagnoleſco*, 1550, and we find the ſame mark in a *Madonna* of *Raphael*, and after it ERRY *Exc.*

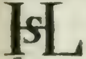
LUCK is repreſented [in *Painting*, &c.] by a female in a changeable habit, a crown of gold on her head, and a full purſe in one hand, and a cord in the other.

The crown and halter ſignify, that by Luck, happineſs attends ſome, and misfortunes others: a poor man going to hang himſelf, finds a treaſure, and leaves the rope in the place; he that left the treaſure, finding the rope, hanged himſelf.

LUST is repreſented [in *Painting*, &c.] by a pretty handſome lady, with coarſe black hair, plaited about her temples ſparkling, wanton eyes, her noſe turning upward, leaning upon her elbow; a ſcorpion in her hand, an he-goat by her ſide, and a vine with grapes.

The ſcorpion is an emblem of Luſt, as is the he-goat; her poſture denotes idleneſs, which foments Luſt; the vine is a token of Luſt; for *ſine Cerere & Baccho friget Venus.*

To give STUFFS *a beautiful* LUSTRE. For every 8 pound of Stuff allow a quarter of a pound of *linſeed*; boil it half an hour, and then ſtrain it through a cloth, and let it ſtand till it is turned almoſt to a jelly; then put an ounce and half of gum to diſſolve 24 hours; then mix the liquors, and put the cloth into this glutinous mixture; take it out, dry it in the ſhade, and preſs; and if you find that once doing this is not ſufficient, repeat the operation, and it will give the ſtuffs a very beautiful luſtre.



HANS LUTENSACH, uſed this mark. He engraved in a book for the nuptials of the emperor *Ferdinand*, tilts, tournaments, and rejoicings in *Callot's* manner.

LV. V. ſignifies *Lucas Van uſter*, in ſome of *Titian*'s landſkips.

LUXURY, is repreſented [in *Painting*, &c.] by a young damſel with hair finely curled, in a manner naked; ſits upon a *Crocodile*, and makes much of a *Partridge*.

Naked, becauſe Luxury ſquanders away the goods of fortune, and deſtroys thoſe of the ſoul; the *Crocodile* for her fœcundity denotes luxury.

M.

MADDER, a root of a plant, much uſed by dyers, to make the moſt ſolid and rich red-colour.

It is common enough; but generally comes from *Holland*, and if it is good it is red; 'tis finer than *Brazil*, and before you uſe it, it muſt be finely powdered, to give the better colour.

To extract a tincture of MADDER *for lake.*

This is done by the ſame method as is done for extracting a *lake* from *Braſil*, and will produce a fine colour, which make into troches, drying them, and it will be a perfect *lake*, and very fine for uſe. *See* BRAZILE *and* LAKE.

M A F. See RAIMONDI.

THOMAS MANBY, was a good *Engliſh* landſkip painter, who had been ſeveral times in *Italy*, and conſequently painted much after the *Italian* manner.

He was famous for bringing over a good collection of pictures, which were ſold at the banquetting-houſe, about the latter end of king *Charles* II's Reign. He died in *London* about the year 1692.

MANGANESE } called by that name by reaſon of its re-
MAGNESE } ſemblance in the colour and weight to the load-ſtone; it will not only give a blue colour, but alſo a green, according to *Virgilius*, whereupon thus the commentator. The green ſays he is watry, and is in all ſorts of glaſs, ſo that *mangane*ſ*e* may not improperly be ſaid to be the ſoap of glaſs. Moreover it will tinge glaſs *red*, *black*, and *purple*; and one may ſay, it is the moſt univerſal ingredient in all ſorts of colours, as this work will ſhew.

This kind of load-ſtone is at preſent called *mangane*ſ*e* or *magne*ſ*e*, according to *Cæ*ſ*alpinas* and *Albertus*; it is made uſe of in glaſs, becauſe it is thought it attracts the liquor in glaſs into itſelf, as the load-ſtone does iron; and without doubt it is this ſort of load-ſtone, that *Pliny* and *Agricola* treat of, who aſſert that it attracts the liquor of the glaſs into itſelf, that it purifies it, and that of *green* or *yellow* it makes it *white*, and that afterwards the fire conſumes it.

Lucretius would perſuade us, that the name of *magne*ſ*e* was given to the load-ſtone, from *Magne*ſ*ia* a certain country in *Lydia*, near *Macedonia*, where it is found; ſo it is no wonder that ſpecies of it we uſe in glaſs, retains the name of *magne*ſ*e*, and ſo *mangane*ſ*e*, ſince the country called by that name produces it.

Pliny mentions ſeveral ſorts of load-ſtones, and gives the differences of them, and tell us the places where they are gotten; but without going farther, that which we call *mangane*ſ*e*, and which ſerves to tinge glaſs, comes in great abundance from *Germany* and *Italy*; but that of *Piedmont* is the beſt known, inſomuch that the *Venetians* hold it in ſuch eſteem, that they make uſe of no other: For that found among the mountains of *Viterba*, and in the ſtate of *Genoa*, contains much iron, and will give a *black* colour; on the contrary, that of *Piedmont* gives a very fine colour, takes away all greenneſs, and makes it very white, the due doſe being obſerv'd.

*The way of preparing Mangane*ſ*e for whitening and tinging* GLASS.

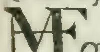
The preparation of *mangane*ſ*e* is much like that of *zaffer*; the piece muſt be put into an iron ladle, and ſet into a reverberatory fire, and when it begins to whiten, ſprinkle it with good vinegar, afterwards beat it, and waſh it while hot, as you do *zaffer*; and after that dry it, and reduce it into powder, and ſift it, and keep it in a veſſel covered for uſe.

As for chuſing *mangane*ſ*e*, the beſt is eaſy to break, very ſhining; the great and leſs pieces of it as full of rocky matter as can be.

MANNEQUIN [in *Painting*] is us'd to ſignify a little ſtatue or model, ordinarily made of wax, and ſometimes of wood; the junctures of which are ſo contriv'd, as that it may be put into any attitude one pleaſes, and its draperies and their folds be diſpos'd, as one would have them.

MANNER [in *Painting*] is a habitude, that a man acquires in the 3 principal parts of painting in the management of colours, lights, and ſhadows, which is either good or bad, according as the painter has practis'd more or leſs after the truth, with judgment and ſtudy. But the beſt painter is he, who has no manner at all, the good or bad choice he makes, is call'd a good or bad *goût*.

ANDREA MANTEGNA, in his time the art of engraving was found out by *Maſo Finiquerra*, a Goldſmith of *Florence*, and firſt practiſed by *Andrea*; he was born in the year 1431, was ſcholar to *Jacopo Squarcione*, liv'd at *Mantua* and *Rome*, excell'd in hiſtory and portraits, died in the year 1517, aged 86 years.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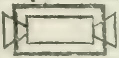

ANDREW MANTEGNA of *Mantua*, or *Padua*, painter and engraver, uſed theſe marks; the ſecond mark is found in the 10 plates of the triumph of *Julius Cæſar*, engraven by himſelf, and afterwards cut in wood in 1599, by *Andrew Andreani* of *Mantua*.

CARLO MARATTI born in 1625, ſcholar to *Andrea Sacchi*, liv'd at *Rome*, excell'd in hiſtory and portraits, aged 88 years.

To counterfeit RED MARBLE *or* PORPHYRY.

Take *Engliſh brown*, if it appear too reddiſh, put to it ſome *umber* or *ſoot*, then take a very ſmooth board, a well poliſh'd marble, or a large piece of glaſs a little oil'd: Then grind the *Engliſh brown*, *roſet*, or *lake*, with *gum tragacanth*; then with a large bruſh, flirt or ſprinkle the glaſs according to the marks and veins of the ſtone. When it is enough ſpotted, let it dry; then temper your *Engliſh brown* and *umber* with *gum tragacanth* water into a paſte; which being laid on the ſpotted glaſs, or marble, let it dry, and poliſh it.

To MARBLE *books* or *paper*.

Diſſolve 4 ounces of *gum arabick*, in 2 quarts of fair water; then provide ſeveral colours mix'd with water in pots or ſhells, and with pencils peculiar to every colour, ſprinkle them by way of intermixture upon the gum-water, which muſt be put into a trough, or ſome broad veſſel; then with a ſtick curl them, or draw them out in ſtreaks, to as much variety as may be done.

Having done this, hold your book or books cloſe together, and only dip the edges in on the top of the water, and colours, very lightly; which done, take them off, and the plain impreſſion of the colours in mixture, will be upon the leaves; doing as well the ends, as the front of the book in the like manner.

and penſive, full of *ſorrow*, *diſcontent*, and *melancholy*, leaning her head on her arm: hard by her in a chair was ſeated *fury* in triumph; and not far from her ſat *death* with a bloody ſtern countenance, offering men's skulls in human blood upon an altar, conſecrated with coals of fire, fetch'd from many cities and towns, burnt and ruin'd by the tyranny of war,

The poetical fable of the MARTAGON, *or* MOUNTAIN LILLY.

Once upon a time, when the Gods were merry-making, *Jupiter*, as his manner was, would needs embark in ſome new amour; and *Sylvia* a young goddeſs, who was but newly arriv'd at the court of heaven, was the fair with whom he was ſmitten.

The deity depending upon his almighty-ſhip, thought he ſhould make an eaſy conqueſt, but was miſtaken in his aim; for when he addreſs'd the goddeſs, ſhe receiv'd his courtſhip with coldneſs and neglect, as became a deity, jealous of her honour and reputation.

But *Jupiter*, who was not us'd to be repuls'd with the firſt refuſal, purſued his amours; but ſhe perſiſting to ſhow an averſion to his ſollicitations, he plainly ſaw her heart was not ſo eaſy to be won as he imagined.

But he at laſt reſolving to obtain by force what he found ſo difficult to gain by careſſes; *Sylvia* found it neceſſary to ſummon all her reaſon to her aid, and by that means got the better of *Jupiter*, and preſerv'd her chaſtity.

But this action of *Jupiter* ſeem'd ſo ſtrange to her, and ſtruck her with ſo much horror, that her noſe ſuddenly guſh'd out a bleeding; the drops of which blood falling on the ground, from them ſprung up the flower call'd the *Martagon*, or *Mountain-Lilly*, of a red colour, and whoſe flower-leaves all turn backwards, in token of *Sylvia*'s averſion to *Jupiter*'s libidinous purſuit.

The MORAL.

A virgin ought to hold nothing ſo dear as her chaſtity and honour, which will always be much regarded; eſpecially if having been once in danger of loſing it, ſhe has bravely reſiſted all temptations, that might have ſeduc'd her to the violation of her chaſtity.

MASSES [in *Painting*] are large parts of a picture, containing the great lights and ſhadows: And thus when it is almoſt dark, we ſee only the *maſſes* of a picture, *i.e.* the places of the lights and ſhadows.

MATRASS is a glaſs veſſel us'd in chymical operations, call'd alſo a *bolt-head*. It is made in the form of a bottle, with a very long narrow neck. The *Matraſs* is luted with earth, when it is to be placed on a very hot fire; when it is required, it ſhould be ſtopp'd very cloſe; it is ſealed hermetically.

MATRICE [*with dyers*] is a term apply'd to the 5 ſimple colours, whence all the reſt are deriv'd or compos'd.

Theſe are the black, white, blue, red, and fallow or root-colour.

MATRICES [*with Letter-founders*] are thoſe ſmall pieces of copper or braſs, at one end of which are engraven *dent-wiſe*, or *en creux*, the ſeveral characters (or letters) us'd in the compoſing for the printing of books.

Each letter or character, and each virgula or point in a compoſition of ſentences, has its ſeveral *matrice*, and of conſequence its ſeveral puncheon to ſtrike it.

Theſe *matrices* are cut by the engravers on metal.

When any types are to be caſt, the *matrice* is faſtened to the end of a mould, ſo diſpos'd, that when the metal is poured on it, it may fall into the *creux*, or cavity of the *matrice*, and take the figure and impreſſion of it.

MATRICES [*with Coiners*] are pieces of ſteel, in form of dyes; on which the ſeveral figures, arms, characters, legends, *&c.* wherewith the ſpecies are to be ſtamp'd, are engraven.

The engraving is perform'd with ſeveral puncheons, which being form'd *in relievo*, or prominent, when ſtruck on the metal, make an indented impreſſion, which the *French* call *en creux*.

MATTURINO a ſcholar of *Rafaelle*, liv'd at *Rome*, excell'd in hiſtory-painting, died in the year 1527.

FRANC MAZZUOLI *call'd* PARMEGIANO, was the firſt who practis'd the art of etching, born in the year 1504, ſcholar to his 2 uncles, liv'd at *Rome* and *Parma*, excell'd in hiſtory and portraits, died in 1540, aged 36 years.

MAY is repreſented [in *Painting*, &c.] with a ſweet and lovely aſpect, clad in a garment of white and green, embroidered with daffodils, hawthorn, and blue-bottles; on his head a garland of white and red damask roſes, holding in one hand a lute; and a nightingal ſitting on the fore-finger of his other.

M. C. ſignifies *Martin de Clif*, or *Clivenſis Auguſtanus*.

M. D. VOS is put for *Martin de Vos*, a celebrated inventor for engravers.

The MEASURES *of a* HUMAN BODY *that are equal between themſelves.*

1. The ſpace between the chin and the throat-pit, is equal to the diameter of the neck.

2. The circumference of the neck, is equal to the diſtance of the throat-pit to the navel.

3. The diameter of the waiſt, is equal to the diſtance between the knob of the throat, and the top of the head, and that is equal to the length of the foot.

4. The ſpace between the eye-lids and the noſtrils, is equal to that between the chin and the throat-bone.

5. The ſpace from the noſe to the chin, is equal to that of the throat-bone to the throat-pit.

6. The diſtance from the hollow of the eye-brow to the centre of the eye, is equal to the prominency of the noſtrils, and the ſpace between the noſtrils, and the end of the upper lip.

7. The diſtance between the top of the nail of the fore-finger, and the joint next the palm or thumb, is equal to the diſtance between the ſaid joint and the wriſt.

8. The greater joint of the fore-finger is the height of the forehead.

9. The ſpace between that joint and top of the nail, is equal to the length of the noſe; from the tip to the arch above the eyes, where the forehead and the noſe is divided, to the 2 firſt joints of the middle finger, are equal to the ſpace between the noſe and the chin.

11. The firſt joint of the middle finger, whereon the nail grows, is the diſtance between the noſe and the mouth.

12. The ſecond joint anſwers to the firſt, which is equal to the chin.

13. The bigger joint of the thumb is equal to the length of the mouth.

14. The ſpace between the top of the chin, and the dint under the lower lip, is equal to the leſſer joint of the thumb.

15. The leaſt joint of each finger is double the length of the nail.

16. The ſpaces between the middle of the eye-brows, and the outward corner of the eyes, is equal to the ſpaces between the ſaid corners and the ears.

17. The height of the forehead, the length of the noſe, and diſtance of the noſe from the chin, are equal.

18. The breadth of the hand is equal to the breadth of the foot.

19. The length of the foot is equal to the meaſure round about the inſtep.

20. Twice the breadth of the hand is equal to the length of it.

21. The arches of the eye-brows are equal to the arch of the upper lip, at the diviſion of the mouth.

22. The breadth of the noſe is the length of the eye, and are either of them equal to half the length of the noſe.

23. The navel is in the middle between the noſe and the knee.

24. The ſpace from the top of the ſhoulder to the elbow, is equal to 2 faces, and from that to the wriſt one and a half.

25. The breadth of the body, at the broadeſt part of the ſhoulders, is 2 faces and a half, which is alſo equal to the diſtance between the elbow and the middle finger.

26. The breadth of the body at the privities is equal to two faces.

27. The thighs, at the thickeſt part near the privities, are the diſtance of 2 faces broad.

28. The thickeſt part of the leg is equal to the ſpace between the top of the forehead, and the end of the noſe.

29. The breadth of the back at the arm-pits, is equal to 2 faces, and ſo are the hips at the buttocks.

30. The length of the middle finger is equal to the ſpace between its laſt joint and the wriſt.

How to take off the IMPRESSION *of* MEDALS.

Take *Ichthyocolla*, i. e. *iſing-glaſs*, called alſo *fiſh-glue*, (which you may have at the druggiſts) break it to pieces, diſſolve ſo much of it, as you think you ſhall have occaſion for (perhaps an ounce or more) in ſo much water as will cover it; ſet it on the fire, and keep it ſtirring, 'till it is wholly diſſolv'd. Then ſtroke ſome of this glue over the medals, whoſe impreſſion you would take, laying them as flat or horizontally as you poſſibly can; and after you have thus covered them perfectly all over, let them lie 'till the glue is hardened; and afterwards raiſe the edge of the glue from each medal with the point of a pin or needle, and the whole impreſſion of the medals in glue will fly off as hard as horn, with all the fine ſharpneſs of the medal, as if it was ſtruck.

This glue you may make of what colour you pleaſe, by mixing the colour in the water the glue is boiled in. Theſe impreſſions muſt be dry'd immediately, but not either in an hot ſun, nor in any damp place, but regularly.

If you uſe *iſing-glaſs* without any colour mix'd with the water, you may (if you pleaſe) when you take the copies from the medals, breathe gently on the concave ſide of them, which in ſome meaſure will moiſten the medal; and then lay it upon a piece of the thickeſt ſort of leaf-gold, and it will ſtick to it; and by ſhining through the *iſing-glaſs*, will appear like a gold medal; and if you would imitate a copper medal, mix *carmine* with the water you diſſolve the *iſing-glaſs* in.

Altho' *water* will do very well for diſſolving the *iſing-glaſs* in for this purpoſe, yet *brandy* or *ſpirits of wine*, will give the glue a much greater ſtrength, ſo as not to be ſubject to grow ſoft by a damp air.

How to take IMPRESSIONS *of large* MEDALS.

Firſt rub the medals gently over with a tuft of fine cotton, moiſtened or greas'd with *ſallad oil*, then having ſome brimſtone melted, enough to cover the medal half an inch thick, put a hoop of card paper round the edge of it, and pour the melted brimſtone on it, but not too hot; as ſoon as it is fix'd and hardened, untie or take off the hoop of card paper, and the impreſſion from the brimſtone will come clean from the medal, which will have produc'd a ſharp and correct mould, in which you may caſt another with *plaiſter of Paris*.

But if you do this on ſilver medals, it will change their colour.

As for ſilver MEDALS;

Bind the medals round with card or other ſtiff paper, having oil'd them; and mixing a little *plaiſter of Paris* with water, fill the hoop with it, then immediately fill the caſe in a ſprinkling manner with the ſame plaiſter 'till it hardens; and when it is grown dry, take it off from the medal.

As for the moulds caſt in brimſtone, which are concave, you are again to caſt ſuch medals again in *plaiſter of Paris*, which will be convex, oiling the mould as before, and uſing the *plaiſter of Paris* as before directed; and by this method you may take off any medal or fine baſs-relief, with a great deal of exactneſs, even ſo as to form medals from them in any ſort of metal.

To take off IMPRESSIONS *in* PLAISTER *of* PARIS *from* COPPER-PLATES.

Oil the plates a little, and bind them about, either with card-paper or other paſte-board, and pour on ſome of the fineſt *plaiſter of Paris* and water, and finiſh the work with plaiſter, 'till it becomes dry, and hardens; and this will give you a fine impreſſion, or draught, of the lines of the plate in the plaiſter, which you may uſe to draw from, if you have occaſion.

How to take off any fine engravings from watch-caſes, or the tops of ſnuff-boxes, &c.

Hold them over the ſmoak of a candle, 'till they are quite black, then wipe off the *black* with the ſoft part of the palm of your hand, and lay on the engraving a piece of white paper, a little wetted with a ſpunge, and over that a thin piece of flannel, or a piece of brown paper held very hard down over the engraven part; which being rubb'd, the paper next the picture will receive a fine impreſſion, as if it had paſs'd through a rolling-preſs.

Another way of taking off MEDALS.

Procure thin pieces of lead, and place the medal horizontally on the top of a firm poſt, or any ſteady place; then lay a piece of harder metal, flat over the lead, and a piece of a round turn'd ſtick over that place, ſuch as is us'd in the ſtaff of a houſe-bruſh, ſawn off about 5 or 6 inches in length, and holding that tight with the left hand on the lead and flat piece of metal, ſtrike the top of the ſtick a ſmart blow with a large hammer, and it will give to the lead a perfect impreſſion of the image of the medal; but this muſt be done by one ſingle blow, to render the impreſſion perfect: even this may be done on any impreſſion made on ſealing-wax.

Another way to take off a MEDAL.

Lay a piece of thin ſheet of block-tin, otherwiſe called *foil*, ſuch as is laid on the backſide of looking-glaſſes in ſilvering them, which may be bought at thoſe ſhops, where *plaiſter of Paris* is ſold, or at ſome pewterer's ſhops; rub this hard upon the metal, and it will give a very good likeneſs of whatever medal it is rubb'd upon.

Impreſſions may be alſo taken from medals with putty, ſuch as is us'd by the glaziers; altho' medals or baſs-reliefs are under-wrought.

Another way of taking off MEDALS.

Take the ſhavings of paper, which you may have at the book-binders, boil them well in common water 'till they are tender, then pound them well in a mortar, 'till they come to be a paſte, then boil them again in ſpring-water with a little *gum Arabick*; let this mixture ſtand a while to ſettle, then pour off the water, ſtraining it through a ſieve or linnen-cloth, and that which remains will be excellent good, either to preſs into any mould, or upon any medal, and when the paſte is dry it will come off very ſharp.

Some medals that are under-wrought cannot be taken off this way; therefore in ſuch caſes, you ſhould take common glue and melt it, fixing a hoop of paſte-board, *&c.* round the edge of the medal; pour on the glue hot, the medal having been firſt oil'd with a tuft of oiled cotton.

When the glue is grown dry and hard, take off the hoop, and the glue will fly off from the edges, and it will then eaſily come off, being ſubject to bend and give way, which the other things before-mentioned will not do. The glue ought to be made ſtrong, and be poured on one third part of an inch thick.

When an impreſſion has been taken by this means, then you muſt hoop your mould of glue with other card-paper, or paſte-board, as before directed: And oil it, ſo that no bubbles or bliſters may be ſeen; that is to ſay, juſt make it greaſy, then you may caſt *plaiſter of Paris* in it, and you will have a good copy of the medal; when this is dry, the glue will fly off, or may be broken off, and there will be a good pattern to caſt from.

Alſo a putty may be made of linſeed-oil, and fine-ground ſtarch, which being well worked together into a paſte, will take a good impreſſion from any medal. This will be much better than common putty.

When you have made theſe moulds, you may caſt in them good medals of bees-wax; but they will come off much ſharper if the mould be in *brimſtone*, than if it be in *plaiſter of Paris*: but when you do this, your wax ſhould be as well blanch'd or whitened, as one would uſe for wax-candles; but it will however be neceſſary to greaſe the mould before the wax is poured in.

But tho' white wax is here recommended, it will not be beſt for the copy of the medal to be white; for the darker colours ſhew the medal much better.

If you would have your copy of a *red* colour, mix *vermilion* with the wax while it is melting; and if *blue*, put in *ſtone-blue* well-beaten or ground, into the melted wax.

As ſoon as theſe wax medals are cold enough to take off, you ſhould lay ſome leaf-gold upon them, preſſing it down gently with a piece of cotton, without rubbing it backwards and forwards, and that will gild your medals.

When you have caſt medals in *plaiſter of Paris*, to make them look like ſteel, or metal, rub them over with a tuft of cotton, lightly greas'd with oil, and then put on them ſome powder of black lead, and rub them well with a bruſh, ſuch as is us'd for the teeth, 'till the whole is equally cover'd, and this will give them a fine gloſs.

You may make theſe medals of *plaiſter of Paris* of the colour of box, by boiling them in *linſeed-oil*, and it will harden them to that degree, as to bear the bruſh in cleaning them, if they have gathered any duſt.

If you would have your medals of *plaiſter of Paris*, of a *yellow* or *golden colour*; then boil a little pearl-aſhes in a pint of water, 'till it makes a ſtrong *lixivium*; then put in about half a quarter of a pint of *French berries*, boil them 'till the liquor is of a very ſtrong *yellow*, and uſe this liquor with your *plaiſter of Paris* inſtead of common water.

If you would have your medals of *plaiſter of Paris* of a *blue* colour, then boil ſome *Lacmus*, or *Litmus*, in river-water, 'till the water is as blue, as you would have it; uſe this water with your plaiſter, when you caſt your medal, to have it of a fine colour.

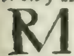
If you would have your medals of *plaiſter of Paris* of a *red* colour, boil a little raſpings of *Brazile* wood in pale ſtale beer; and when it is ſtrain'd off, uſe it as common-water with the plaiſter.

It is very likely, that if you would have theſe ſorts of medals *green*, the fine tranſparent gum of *verdigreaſe* will mix with the *plaiſter of Paris*, and ſo make a fine green.

You may, as has been ſaid, make your medals moſt eaſily of *Ichthyocolla*, or fiſh-glue; and for the gold coins uſe *leaf-gold*, and for the ſilver coins, *leaf-ſilver*, or with tin-foil; and for the copper, leaf-copper made in *Germany*; and as for leather coins, mix a little fuller's earth with the water or ſpirit, before the melting the *fiſh-glue* or *iſing-glaſs* in it.

To caſt MEDALS *very lively.*

To do this, calcine *ſpeculum* or *ſpaud* in a crucible, then put it into a veſſel of earth, and pour water on it; and when you have ſtirred it well, add as much more water, and being ſettled, take it out, and make it into balls; then calcine it a ſecond time, and pound it into powder, and ſprinkle ſome vinegar upon it, and by that means make it into a paſte: then calcine it again a third time, and when it is cold, reduce it into powder, and ſearce it very fine, adding to it an ounce of *ſal armoniac* diſſolved in water to 12 ounces of *ſpeculum*; keep it then in a cellar, and with it make your moulds, or otherwiſe frame your medals of it, moiſtening it alſo with *crocus martis*, or *ſaffron of iron*, in which you may caſt the fineſt hair imaginable.


PETER MERCAUD uſed this mark.

MERCURY, is a fluid mineral matter, which perfectly reſembles ſilver in fuſion. It is popularly call'd *quick-ſilver*.

Authors are divided as to what claſs of foſſils to range *mercury* under: ſome hold it to be a *metal*; others, a *ſemi-metal*; and others, an *imperfect metal*.

Boerhaave obſerves, that it is very improperly call'd a metal; inaſmuch as it has not all the Characters of ſuch a Body; nor ſcarce any thing in common with the other metals, except weight and ſimilarity of parts; as for example, it is neither diſſolvable by fire, malleable, nor fix'd.

In effect it ſeems to conſtitute a peculiar claſs of foſſils: and is rather the mother or baſis of all metals, than a metal itſelf.

The characters or properties of MERCURY are,

1. That of all bodies it is the heavieſt next to gold, and ſtill by how much the purer it is, by ſo much it is the heavier: the ordinary proportion of *mercury* to gold, is that of 14 to 19; and if any mercury be found to be more than according to this *ratio*, it may ſafely be concluded that it has gold in it.

2. The ſecond character is, that it is the moſt fluid of all bodies; that is, its parts ſeparate and recede from each other by the ſmalleſt force; and of conſequence it is that of all bodies, whoſe parts cohere leaſt, and are the leaſt tenacious, and therefore of all others the leaſt ductile and malleable.

The parts of water do not divide ſo readily as thoſe of quickſilver; and the parts of oil much leſs.

3. The third property of *mercury* is, that of all bodies it is diviſible into the minuteſt or ſmalleſt parts; thus being expos'd to the fire, it reſolves into a fume, ſcarce perceivable to the eye.

4. The fourth character is, that it is extremely volatile, being convertible into fume, even by a ſand-heat.

The gilders are but too well acquainted with the vaporous quality of *mercury*, which frequently render them epileptic or paralytic; and ſometimes ſalivate them.

5. The fifth property is, that it eaſily enters, and intimately adheres to *gold*; but not ſo eaſily to other metals, with difficulty to *copper*, and not at all to *iron*.

6. The ſixth character is, that of all *fluids* it is the coldeſt and hotteſt, ſuppoſing the circumſtances the ſame: this property depends on the great weight of *mercury*; for the heat and cold of all bodies is, *cæteris paribus*, as their weights.

Now *mercury* being 4 times heavier than water, if both of them be expoſed in a winter's night to the ſame cold, the *mercury* muſt be ſo much colder than water, as it is heavier.

So alſo, if they be both apply'd to the ſame degree of heat, while the *water* becomes *warm*, the *mercury* will be *hot* enough to burn the hands.

7. The ſeventh property of *mercury* is, that it is diſſoluble by almoſt all acids, and unites itſelf with them, at leaſt all foſſil acids.

Only vinegar does not diſſolve it; and hence we are furniſh'd with a method of detecting the frauds of the druggiſts, *&c.* who make a practice of ſophiſticating quickſilver with lead.

Pound a little mercury with vinegar in a mortar, and if the vinegar grow ſweetiſh, it is a proof there is a mixture of *lead* in it.

If *copper* has been mix'd with it, the *mercury* will turn greeniſh or bluiſh: and if there be no adulteration, the *mercury* and vinegar will both remain as before.

8. The eighth property of *mercury* is, that it is the moſt ſimple of all bodies, next after gold; and accordingly it is found the ſame in all its parts, as far as obſervation goes.

9. The ninth property of *mercury* is, that it is not in any meaſure *ſharp*, for it ſhews no Acrimony in the taſte, nor does it corrode any body: and if a carcaſs were to be buried in quickſilver, it would there remain without being any way hurt.

MERCURY *~~is found~~ in mines.*

The chief mines of *mercury* are thoſe of *Hungary*, *Spain*, *Friuli*, and *Peru*.

The greateſt part of the quickſilver comes to us from *Friuli*, where there are abundance of mines, belonging to the emperor.

It is found under three ſeveral forms.

1. In ruddy glebes or clods, call'd *cinnabar.*

2. In hard ſtony glebes, or a mineral ſubſtance of a ſaffron, and ſometimes a blackiſh colour.

3. It is alſo found pure: for upon opening holes in the beds of ſtones, *&c.* there ſometimes guſhes out a vein or ſtream of pure *mercury*, call'd *virgin mercury.*

The method of ſeparating the mercury *from the ore or earth.*

The mineral glebe is firſt ground to powder, and then a great quantity of water put upon it, and the whole is kept ſtirring and working briskly about, till all the water becomes exceeding thick and turbid.

This water they let ſtand till it ſettles, and then pour it off, and ſupply its place with freſh, which they ſtir and work as before.

This is repeated ſo often, till the water at length comes away perfectly clear; then all that remains at the bottom of the veſſel, is *mercury*, and other metalline matter.

To this *mercury*, &c. is added *ſcoria* of iron, putting the whole in large iron retorts; and ſo diſtilling it; by which means, all the heterogeneous, metallick, and ſtony part is ſeparated from it, and the *mercury* left pure.

As to the *mercury* in *cinnabar*, they don't find it worth while to diſtill it, to get it out; the *cinnabar* ſelling for a better price than the *mercury* itſelf.

Thoſe miſerable wretches, who are either condemned or hired to work in the quick-ſilver mines, all die in a little time: they are firſt affected with tremblings, and proceed to a ſalivation; then their teeth drop out, and they are ſeized with pains all over, eſpecially in their bones, which the *mercury* penetrates; and thus they die.

As to the *Spaniſh mercury*, the earthy matter, with which it is mix'd, is *red*, and ſpeckled with *black* and *white*, and ſo hard, that it is not to be broken up without gun-powder.

The *Hungarian mercury* is frequently a hard ſtone; but ordinarily a reddiſh earth.

In *Friuli* there is a ſoft earth, where the virgin quickſilver is found, and a hard ſtone, which yields the common *mercury.*

The mine of *Idica*, which is one of thoſe belonging to *Friuli*, is ſo rich, that it yields always half quickſilver, and ſometimes 2 thirds.

The mine of *Juan Cabelaca*, or *Guan Cabeleca* in *Peru*, is ſtill more conſiderable; the earth of this mine is of a whitiſh red, like half burnt bricks; firſt they break it, and then expoſe it to the fire, by ſpreading it on a lay of common earth, wherewith the grate of an earthen furnace is covered; under this grate they kindle a fire with a ſort of herb, which the *Spaniards* call *Icho*, which is ſo abſolutely neceſſary for theſe works, that the cutting of it is forbid for the ſpace of 60 miles round.

In proportion as the mineral heats, the *mercury* riſes volatiliz'd into ſmoke; which ſmoke, finding no vent through the capital of the furnace, which is exactly luted, eſcapes through a hole made for the purpoſe, communicating with ſeveral earthen cucurbits, fitted within one another.

The water at the bottom of each cucurbit condenſing it to ſmoke, the quickſilver precipitates, and is taken up when the operation is over.

In this proceſs there are three things remarkable.

1. That the farther the cucurbits are from the furnace, the more they are fill'd with quickſilver.

2. That at laſt they all grow ſo hot, that they would break, if they were not ſprinkled from time to time with water.

3. That it has been obſerved, that the workmen employed in the preparation of *mercury*, never hold it long, but become paralytic, and die hectic.

To prevent which, as much as may be, they uſe this precaution, to hold a piece of gold in their mouths, to imbibe the *Effluvia*, and intercept the paſſage of them into the body.

Dr. *Pope* tells us of one he ſaw at the mines of *Friuli*, who, in 6 months time, was ſo impregnated with the metal, that if he put a piece of braſs in his mouth, or even rubbing it in his fingers, it would turn as white as ſilver.

The method of purifying *mercury*, is by waſhing it ſeveral times in vinegar, in which common ſalt has been diſſolv'd; or by paſſing and repaſſing it frequently over a *chamois* skin.

Am. Paræus tells us, that the beſt way is to make a dog ſwallow a pound at a time, and afterwards to ſeparate it from the excrements, and waſh it in vinegar.

The uſes of MERCURY are very conſiderable in *gilding*, making *looking-glaſſes*, in *refining gold*, &c.

MERCURY, is deſcrib'd by the antients, as a beardleſs young man, having 2 ſmall wings fix'd behind his ſhoulders and ears, his body almoſt all naked, excepting that a thin veil hangs down from his ſhoulders, which is wrapp'd round his body; he held a golden purſe in his right hand, and in his left a *caduceus*, or ſnaky ſtaff, *viz.* a ſlender wand, about which two ſnakes did annodate, *i. e.* twine in certain knots, their heads meeting together juſt at the top, as their tails do at the bottom.

This reſemblance was call'd concordia, *or* ſignum pacis, *on which account ambaſſadors, heralds, and great men in matters of ſtate, always carried in their hand ſuch a kind of ſtaff, and were call'd* caduceatores.

Some however repreſented *Mercury* in the likeneſs of a very aged man, with his head almoſt bald, excepting that ſome few hairs remained on the ſides, ſhort and curl'd; of a grim, ſevere, and ſour aſpect; of a tawney complexion, an antient hue; clad with a lion's skin, for an upper garment; holding in his right-hand a large pole-ax, and in his left-hand an iron bow; and a quiver of ſteel-headed arrows hanging at his back; to the end of his tongue were faſtned many ſmall chains of gold, at the ends of which were tied multitudes of all ſorts of men, which he ſeemed to draw to him; looking continually backward, to behold the innumerable troops of people following him.

By this deſcription is ſignified the all-powerful and attractive virtue of eloquence; which by his age is underſtood to be found only in old, wiſe, and experienc'd men, as being more mature and perfect in them, than in thoſe of younger years.

Apuleius writes, that *Mercury* was a very youth, having very ſhort hair on his head, of an amber colour, and curled; clad only with a very thin veil of purple ſilk.

He is alſo drawn with long, curled, yellow hair; in a coat of flame colour; and with a pure white mantle trimmed with gold and ſilver; with a white beaver or hat, with white feathers; golden ſhoes, and a ſilver rod in his hand.

Martianus Capella alſo deſcribes him young; but of a ſtrong and well-compoſed body; with certain young hairs of a yellowiſh colour, ſprouting out of his chin.

Among ſome of the *Ægyptians*, he was depicted with a head like a dog, holding in his right-hand a *caduceus*, *i. e.* a ſnaky wand, and ſhaking a green bough of palm with his left-hand.

By the dog's head was ſignified ſubtilty and craftineſs, (no beaſt being accounted ſo ſubtil as a dog;) by the ſnaky wand, the power of wiſdom and eloquence in producing peace, which is ſignified by the green palm-branch.

Pauſanias relates, that *Mercury* was repreſented in a certain province of *Corinth*, as a young man carrying a ram upon his ſhoulders: and that a ſtatue was brought from *Arcadia* to *Rome*, and erected in the temple of *Jupiter Olympus*, which had on its head a helmet of engraven ſteel, and a coat over his ſhoulder, holding under his Arm the image of a ram.

MERCY, is repreſented [in *Painting*, &c.] as a lady ſitting upon a lyon, holding in one hand a ſpear, and in the other an arrow, which ſhe ſeems to throw away.

MICHAEL ANGELO MERIGI *da* CARAVAGGIO, born in the year 1669, ſcholar of Cavalier *Gioſeppino*, liv'd at *Venice*, *Rome*, and *Malta*, excell'd in hiſtory and half figures: he died in the year 1609, aged 40 years.

MERMAN, MERMAID, } Are ſea-creatures, frequently talk'd of, as being ſuppoſed half human, and half a fiſh, and are repreſented by *Painters*, &c. in the form of a man or woman from the navel upwards, and with the tail of a fiſh from thence downwards.

It is true, naturaliſts have been in doubt as to the reality of *mermen* and *mermaids*, yet there ſeems to be ſufficient teſtimony to eſtabliſh it beyond contradiction.

We are inform'd by *Larrey*, that in the year 1187, ſuch a monſter was fiſh'd up in the county of *Suffolk*, and was kept by the governour for 6 months.

This animal bore ſo great a reſemblance to a man, that nothing ſeem'd wanting to it but ſpeech.

That one day it took the opportunity of making its eſcape, and plunging into the ſea, was never more heard of. *Hiſt. d'Angleterre*, P. I. p. 403.

In the year 1430. after a great tempeſt, which broke down the dykes in *Holland*, and made way for the ſea into the meadows, *&c.* ſome maids of the town of *Edam* in *Weſt-Frieſland* going in a boat to milk the cows, perceiv'd a *mermaid* embarraſs'd in the mud, with a very little water.

They took it into the boat, and brought it with them to *Edam*, dreſs'd it in women's apparel, and taught it to ſpin. It fed like one of them; but could never be brought to ſpeak.

It was ſome time after brought to *Haerlem*, where it lived for ſome years, tho' ſtill ſhewing an inclination to the water.

Parival relates, that they had communicated to it ſome notions of a deity; and that it made its reverences very devoutly, whenever it paſs'd by a crucifix. *Delices de Hollande.*

In the year 1560, ſome fiſhermen are related to have brought up by one draught of the net, 7 *mermen* and *maids*, near the iſland *Manar*, on the weſtern coaſt of the iſland of *Ceylon*; of which ſeveral jeſuits, and amongſt the reſt, *F. Hen. Henriques*, and *Dimas Boſquez*, phyſician to the viceroy of *Goa*, were witneſſes: the phyſician, who examin'd them with a great deal of care, aſſerts that all the parts, both external and internal, were found perfectly conformable to thoſe of men. See the *Hiſtor. de la Campagne de Jeſus*, P. II. T. iv. N°. 276. where the relation is given at large.

There is alſo another relation, that is well atteſted, of a *merman*, near the great rock call'd *Diamond*, on the coaſt of *Martinico*.

The perſons who ſaw it, gave in a preciſe deſcription of it before a notary. They affirm that they ſaw it wipe its hand over its face, and heard it blow its noſe.

Another animal of the ſame ſpecies was taken in the *Baltick*, in the year 1531, and ſent as a preſent to *Sigiſmund* king of *Poland*; with whom it liv'd 3 days, and was ſeen by all the court.

Damian Gaes relates, that another very young one was taken near *Rocca de Sintra.*

METALS are ſimple foſſil bodies, which fuſe and become fluid by fire, and coagulate by cold, and harden into a ſolid maſs, capable of diſtending under the hammer.

A metal is ſaid to be ſimple, as it may be affirm'd of every the minuteſt particle of a *metal, e. gr.* a grain of gold, that it is gold, or has all the properties of gold.

A *metal is fuſible* by fire; that is, when expoſ'd to a great fire, it diſſolves into parts, which are eaſily moveable among themſelves, or are actually in motion.

A *metal is fix'd, i. e.* it bears the fire without flying off in vapours. Tho' *metals* are fix'd only to a certain degree; for by the large burning-glaſſes of M. *Tſchernhauſen* and *Villette*, all *metals* will readily evaporate.

Such are the proper characteriſticks of metals, which are no ways applicable to any other bodies in nature; for a *diamond*, or other ſtone, tho' it be a ſimple body, yet is not fuſible in the fire, nor capable of being extended under the hammer, and the *ſalt* being diſſolvable by fire, is not malleable, but will break under the hammer.

There are indeed certain woods, which yield in ſome meaſure to the hammer; but then they fall to duſt in the fire, and ſo of the reſt.

There are but 6 *metals* found in all nature, *viz. gold, ſilver, copper, tin, lead,* and *iron.*

To theſe is uſually added a ſeventh *metal*, viz. *mercury* or *quickſilver*, but improperly, as it has not all the characters of a *metal*, nor ſcarce any thing in common with the other *metals*, except weight and ſimilarity of parts.

Thus for example it is neither diſſolvable by fire, malleable, nor fix'd: and in reality it ſeems to conſtitute a peculiar claſs of foſſils, and is rather the *mother* or *baſis* of all *metals* than a *metal* itſelf.

The common radical character of *metals* is, that of all known bodies they are the heavieſt.

By the experiments made by Dr. *Halley*, the weight of gold to that of glaſs is determin'd to be as 7 to 1; and the weight of tin, the lighteſt of all *metals*, to that of gold as 7 to 19; which conſiderably ſurpaſſes the weight of all *ſtones*, marbles, gems, and other the moſt ſolid bodies, as appears from the tables of ſpecific gravities.

Nor is there any body in nature but a *metal*, that is one third of the weight of *gold.*

The *Royal Society* furniſh us with various experiments of this kind.

The weights of the ſeveral *metals* and other ſolids, they have examin'd hydroſtatically, by weighing them in air and water; and the weight by the fluids, by weighing an equal portion of each.

By ſuch experiments they find, that taking the ſame weights of *water* and *gold*, the bulk or magnitude of the water is to that of *gold*, as 19636 to 1000; conſequently that the weight of *gold* is to *water* nearly as 19 to 1.

The ſpecific weight of the ſeveral metals by this means determin'd, ſtands thus.

Gold	19635	Iron	7852
Quickſilver	14019	Tin	7321
Lead	11341	Stone	2000
Silver	105135	Water	1000
Copper	8843	Air	$\frac{8}{27}$

The Cubic Inch of		*Ounces.*	*Drachms.*	*Grains.*
Gold	weighs	12	2	52
Quickſilver		8	6	8
Lead		7	3	30
Silver		6	5	28
Copper		5	6	36
Iron		5	1	24
Tin		4	6	17

As for the origin and formation of Metals, the opinions of philoſophers, ancient and modern, are various.

Plato ſuppoſes the cauſes of *metals* to be a humid vapour, inclos'd in the bowels of the earth, which being variouſly intermixt with parts of the earth, produce various *metals*.

Plotin ſuppoſes ſulphur to be the father of *metals*, and an oleaginous viſcous humour the mother.

Lidyat attempts to prove, that all *metals* are generated by a ſubterraneous fire.

Du Hamel ſhews, that *metals* don't take their riſe, either from any vaporous exhalation, or from water, or from earth; but are generated of *mercury*, *ſulphur*, and *ſalt*: that *metals* take their matter and weight from *mercury*, and their tincture and form from *ſulphur*.

M. *Tournefort* is of opinion, that all *metals* have their origin from ſeeds like plants; and that they have veſſels in which juices circulate.

To take away the brittleneſs of any METAL.

Firſt calcine the *metal*, and put it under dung; and afterwards heat it red-hot at the fire, or melt it, and quench it often

ten in *Aqua-vitæ* often diſtill'd; or uſe *roſin* or *turpentine*, or the *oil* of it; or *wax*, *ſuet*, *euphorbium*, *myrrh*, or *artificial borax*: For if *metals* be not malleable, unctuous bodies will oftentimes make them ſofter.

If either all theſe, or ſome of theſe, be made up with ſome moiſture into little cakes, and when the *metal* yields to the fire, by blowing with the bellows, and ſome of them be caſt in, and be made thick like mud, or clear, then ſet the *metal* to the fire, that it may be red-hot in burning-coals, take it out, and quench it in them, and ſo let it remain for half an hour to drink in.

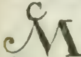
Or daub the *metal* with *dog's-greaſe*, and melt it with it, for that will take away much of the brittleneſs of it, and make it ſo that it may be hammered and wrought.

To colour METAL *like* GOLD.

Take *ſal-armoniack*, *white vitriol*, *ſtone-ſalt*, *verdigreaſe*, of each a like quantity in fine powder, lay it upon the *metal*, then put it into the fire for an hour, take it out, and quench it in *urine*, and the *metal* will have the colour of gold.

To melt METALS *quickly*.

Put in a layer or courſe of the powder of any *metal* into a crucible, then lay upon it a layer of *ſulphur*, *ſalt-petre*, and *ſaw-duſt*, of each a like quantity, mixed together; put a coal of fire to it, and the *metal* will immediately be in a maſs.



JOSEPH MARIA METELLI *of* Bologna, a famous and fantaſtical engraver of all kinds of ſubjects, us'd this mark.

MEZZO-TINTO.

1. Take a well-poliſhed copper-plate, and make it all over rough one way, with a ſort of engine particularly deſign'd for this purpoſe: then croſs it over with the engine again; and if you ſee occaſion, croſs it over the third time, 'till it be made rough alike, *viz.* ſo as if it were to be printed, it would print black all over.

2. The ſhape or form of this engine, or inſtrument, is various and manifold, according to the fancy of the artiſt; thoſe that deſire them, may have them of ſeveral perſons in *London*, who profeſs and practiſe the arts of *drawing*, *engraving*, and *etching*.

3. When you have thus rough'd the plate, take *charcoal*, *black chalk*, or *black-lead*, to rub over the plate, and draw the deſign with white chalk upon the ſame; then take a ſharp ſtift, and trace out the out-lines of the deſign, which you have drawn with white chalk.

4. Where you would have the light ſtrike the ſtrongeſt, take a burniſher, and burniſh that part of the plate as clean and ſmooth, as it was when it was firſt poliſhed.

5. Where you would have the light fainter, there you muſt poliſh it ſo much, and after this manner you muſt either increaſe the light in your deſign, making it either fainter or ſtronger, as the neceſſity of the work requires.

6. *To take an old print off on a piece of white paper, and not ſpoil the print*; ſmear the print all over with linſeed-oil with a clean cloth.

7. Then lay a clean piece of paper over the former, and lay them both upon a poliſh'd copper-plate, and paſs them through the rolling-preſs, and ſo will the white paper receive the reverſe of the print, or the print backwards.

8. But to take the oil out of the print, you muſt waſh it with *oil of ſpike*, or *turpentine*; then having dry'd it by or over a fire, the *linſeed oil* with the *oil of ſpike* will evaporate, and leave the print as fair as it was at firſt.

MEZZO-TINTO *prints* are for back-painting upon glaſs to be preferr'd to thoſe that are engraven; becauſe that the former, if done with a neat and careful hand, and on a good and fine-grounded print, can ſcarcely be diſtinguiſhed from limning; whereas in thoſe that are engraven, all the ſtrokes of the graver are plainly viſible.

2. Of *mezzo-tinto* prints, ſome have a coarſe ground, and others a fine and ſoft one, as if they were no more than the pricks of a pen; whereas the other has ſoft and fine ſhadows, like a piece neatly drawn with *Indian-ink*, or a *black-lead* pencil.

3. *In chuſing your prints to work upon, obſerve the paper they are printed on*; if it be too thick, or too much gumm'd, that may be diſcovered by wetting a corner of it with water, or your tongue; where, if it paſſes not through the paper preſently, it is not fit for the purpoſe; but a thin, ſpungy paper is what you ſhould chuſe.

4. The glaſs you paint it on, ought not to be common window-glaſs, for that will ſpoil your work; but either true and thin ground, and well-poliſh'd looking-glaſs, or a ſort of fine white glaſs, call'd *Cock-hill glaſs*.

Of laying mezzo-tinto prints upon the glaſs.

1. Having provided ſuch a glaſs of the ſame ſize as your picture, ſteep the print flat-ways in warm water for 4 hours, more or leſs, according to the thickneſs or thinneſs, or hardneſs of the paper; and then with a thin knife or bruſh, the hairs of which will not come out, ſpread *Venice turpentine* very thin and even all over the glaſs: and if the weather be cold, warm the glaſs at the fire, and dab it all over with your fingers, that there may not be the leaſt ſpeck of the glaſs, that is not covered with *turpentine*.

2. Then take the print out of the water, and lay it on a table ſmooth, upon a clean napkin or ſheet of paper, or between 2 papers, to dry out all the ſuperfluous water.

3. *When you have done this, lay the print upon the glaſs by degrees*, beginning at one end, and ſtroking outwards that part which is juſt faſten'd to the glaſs, that no wind or water may lie betwixt that and the glaſs, which will cauſe bliſters, and which you muſt always be very careful to ſtroke out.

4. *If* it ſhall happen that you perceive you have not laid the print on the glaſs exactly even, then by warming the foreſide of the glaſs before the fire, it will ſo ſoften and thin the *turpentine*, that you may with care and gentleneſs take it off again, and lay it on again immediately, not ſuffering the print to dry.

5. *Your print being laid on the glaſs exactly*, you muſt proceed to rubbing it with your finger, to rub off all the thickneſs of paper, which will roll off in little rolls, 'till nothing of it is left upon the glaſs but a thin film like a cobweb, that is faſt ſtuck to the glaſs by the *turpentine*; but great care is to be taken in rubbing, that you rub not any holes in the print, eſpecially in the lights, which are the moſt tender parts.

6. If your picture be large, ſo that ſome part of the paper ſhould grow dry, while you are rubbing the other, you ſhould, with a little water on your finger, wet them now and then, as you ſee occaſion, to keep them moiſt, for the paper will not rub when grown dry.

7. *When you have rubb'd or peel'd it all over, ſo long as 'till you perceive the print appear tranſparent on the back-ſide*; then ſet it by to dry for 2 hours; after which, varniſh it over with *maſtich varniſh*, or *turpentine varniſh*, 4 or 5 times, or ſo often, 'till you can ſee clearly through it, and after 24 hours you may proceed to painting it.

Another way to do the ſame.

Soak the print in water, and dry it as before, and ſpread the glaſs with *oil of maſtich*, or ſome *turpentine*, or with *maſtich varniſh*, (*which ſee.*)

Then lay on the print upon the glaſs exactly as before, and roll or rub off the paper as before, leaving only the ſhadow or figure behind: you may bruſh it off with a bruſh or feather, 'till you ſee none but the ink or ſhadow'd part remains, then varniſh it over with *maſtich varniſh*; then ſet it by to dry, keep it from duſt, 'till you begin to paint it.

The painting of mezzo-tinto prints is perform'd with colours, either tranſparent or opake.

The tranſparent colours are chiefly *carmine*, *fine lake*, *brown pink*, *fine ſmalt*, *diſtill'd verdigreaſe*, and *ultramarine*. The chief opake colours are *flake white*, *yellow* or *Dutch pink*, *light* and *brown red*, *terra-vert*, *umber*, *Cologn-earth*, *ivory-black*, *blue*, *black*, *vermilion*, *blue-bice*, *maſticote*, *yellow* and *pale red orpiment*.

Carmine is the fineſt and moſt excellent *red*, and is ſometimes ſold for 3 *l.* an ounce, or more.

Fine lake is alſo an admirable *red*, and is worth about 2 *s.* or 2 *s.* 6 *d.* an ounce.

Brown or *glazing pink* is a colour much about the ſame price as *lake*.

Fine ſmalt is a good blue, and worth 4 or 5 *s.* a pound.

Diſtill'd verdigreaſe ground is a good green, and may be had much about the ſame rate with *fine lake*, or *brown pink*.

Ultramarine is the richeſt *blue* in the world, but of ſeveral prices; the deepeſt and beſt is worth 6 or 7 *l.* an ounce; a mean ſort is ſold for 3 or 4 *l.* and this is very good, and fit enough for this uſe: there is another ſort that is ſold for 20 *s.* an ounce, which may ſerve for painting, but is too coarſe for glazing.

The opake colours are,

Flake white, which finely ground with *nut-oil*, may be had for about 2 *s.* the pound. *White-lead* ground in the ſame oil 1 *s.* a pound.

Yellow or *Dutch pink*, when ground, 3 *s.* 6 *d.* a pound.

Light and *brown Red*, which are *yellow* and *brown oaker* burnt and ground, 4 *s.* the pound.

The *ſame* finely ground in *linſeed-oil*, 3 *d.* an ounce.

Terra-vert is but ſeldom us'd in this painting, but much in all others.

Umber, *Cologn-earth*, and *ivory-black*, and *blue-black* when ground, 3 *d.* an ounce.

Vermilion finely ground, may be worth about 10 *s.* a pound.

Blue bice, which is only of uſe for making of green colours, 4 *d.* or 6 *d.* an ounce.

Maſticote the fineſt and freeſt from grit, which is of the brighteſt colour, is beſt, and is worth 10 *s.* an ounce.

Red orpiment, which muſt be mix'd with drying oil, 2 *d.* an ounce more.

All the tranſparent colours muſt be ground with *nut-oil*; opake colours are ground moſtly with gum-water, ſome with gold ſize, and ſome with linſeed oil, and drying oil.

To paint Mezzotinto prints.

Whether in landskip, or other prints, the firſt thing you have to do, is to glaze all thoſe places which require it.

But the beſt way is to work ſetting, not ſtanding, becauſe you will be able to move your hand and the pencil with the more ſteadineſs.

And it will be proper to have a table-eaſel to ſet your glaſs upon, almoſt like a reading-desk, excepting that there is a pannel or back-board for a book. The painting-desk muſt be all open, only with 3 or 4 wires to keep the picture from falling through, and a narrow ledge at the bottom for it to ſtand upon, and little holes made equally diſtant on both ſides of it, as in painters eaſels, that by pegs or pins, and a ledge laid upon them, you may raiſe the picture higher or lower, as beſt agrees with your conveniency.

It will alſo be beſt to lay a ſheet of white paper behind the picture on the table, and you will find it better to your purpoſe, than if placed againſt the window.

If you would have your glazing to lie thin, and to dry quickly, mix varniſh when you lay it on the picture, and in 3 *or* 4 *hours time they will be fit for receiving other colours.*

And in landſkips you ſhould firſt glaze the neareſt and great trees, grounding them well with *brown pink*; but if you would have them greener, add diſtill'd *verdigreaſe.*

Thoſe trees that you would have of a lively and beautiful green, as alſo leaves and woods, muſt be glaz'd with *Dutch pink*, and diſtill'd *verdigreaſe*; but the trees farther off with *verdigreaſe* alone.

Hills, mountains, and trees, at the greateſt diſtance of all, are to be glaz'd with *fine ſmalt*, a little *lake*, and *verdigreaſe*, all thinly mix'd with varniſh.

For the sky uſe *ultramarine*, or for want of that *fine ſmalt*, mix it thin with varniſh, and glaze it over 2 or 3 times with a clean large pencil, and a very quick ſtroke; for if you are tedious, it will dry ſo faſt, that you cannot poſſibly lay it even.

If your landſkips are furniſhed with figures, buildings, rocks, ruins, *&c.* they require to be finiſh'd firſt of all, before any thing elſe is done.

The mixtures of colours for theſe things conſiſt chiefly of *blacks*, *whites*, and *yellows*, with ſometimes a little *red*: but the mixture, compoſition, and proportions of them, muſt always be left to the judgment and experience of the artiſt, with this conſideration, that all the colours for this kind of painting ought to be very light.

Now to finiſh the *ground-trees and sky* with the reſt of the picture, begin as before with the neareſt or largeſt trees, and with *yellow pink* and *white* paint over the lighteſt leaves; but of the darker colour of *pink*, and a little *ſmalt*, go cleverly over the darkeſt and outward leaves with a ſmall pencil dipt in varniſh.

Thoſe trees that you would have beautiful, paint with a mixture of *yellow maſticote*, *white*, and *verdigreaſe*; the darker parts with *pink*, *verdigreaſe*, and *white*; as alſo thoſe trees, which you glaz'd with *verdigreaſe* only, they being mix'd very light with *white.*

Bu to finiſh the sky and foreſight, if any clouds appear, touch them with varniſh and light colours made of white, yellow oaker, and lake. And with theſe likewiſe touch the lighteſt part of hills and towns at the remoteſt diſtances: Alſo mix *ſmalt* and *white*, as light as you can, to paint over the sky; and to theſe add a tincture of *lake*, to ſhadow over the darkeſt clouds; making all your colours to lie thin and even.

If you would have the picture look more lively, ſet it againſt the light, or on the eaſel; and tho' it is painted all over, yet you may perceive the lights and ſhadows through it: but if not, what was before painted will direct you, your sky and foreſight then are to be limned with the ſame; but lighter colours than the former, and every part beſide reſpectively.

To paint a human body, and firſt the face.

Glaze and touch the deep ſhadows thinly with *lake*, *brown pink*, and *varniſh*, and the *white* ſpeck and *black* ball of the eye, as the print will direct you; alſo the round white ball, of a convenient colour.

Make the lips of a fine red with *carmine* or *red lake*, ſhadow the dark ſide of the face with *vermilion*, *yellow pink*, and *white.*

Give ſome touches on the ſtrongeſt lights of the face, as top of the noſe, forehead, by the eyes, mouth and chin, with a colour made of white, pale *maſticote*, or *yellow oaker*, and a little *vermilion* mixt according to your diſcretion.

Then mix it a little darker, and lay it all over the face, that was not painted before; but make the mouth and cheeks ſomewhat redder.

Then with a fine clean pencil a little worn, hatch and ſweeten all your colours and ſhadows, cleanſing the pencil as often as you ſhall ſee occaſion.

If any part of the picture is too pale, you may help it by the fore-mentioned methods, while your work is moiſt.

Now here it is to be noted, that you muſt uſe no varniſh in painting of fleſh colours, except what is us'd in glazing their ſhadows: For, if you ſhould mix varniſh with them, you will find this inconvenience, that the colours will dry ſo faſt, that you will not be able to ſweeten the ſhadows with the fleſh.

For a ſwarthy complexion :

Mix your *fleſh-colour* with *white*, *yellow* or *brown oaker*, and light *red*, with fitting ſhadows.

Obſerve the like in painting necks, ſhoulders, breaſts, and naked bodies as in the face.

When any of them are dry, you may go over them again, by which ſecond operation you abſolutely mix your colours to your deſire.

Keep a ſteady hand, and let not your pencil traverſe and go over upon lines of a different colour.

For the hair:

Don't uſe varniſh for the hair, nor colours ſo dark as the life, for the print will darken it; for *black* hair mix *white*, *black*, *red oaker*, with a touch of *lake* or *red*. All which produce an aſh-colour; and the hair being covered with it, will produce a natural black.

To make the curls ſhew ſtronger, touch the lighteſt parts with a lighter colour, and the darkeſt with the contrary, all which may be ſeen through, if not laid too thick.

For the drapery:

If the colour is broken, take care of its mixture, ſo as to make 3 degrees of the ſame colour; one the very colour, the other lighter, and the third darker, which is for the darkeſt folds, as the lighteſt is for the lighteſt parts of the garment, and the colour between both for the other parts of the garment.

Embroidery or fringes are done with ſhell or powdered gold or ſilver.

Mix your metals with gum-water, and hatch with a fine pencil, or embroider your flowers, and touch the fringes, or what elſe you deſire, before you either glaze or paint the drapery deſigned.

For changeable drapery:

If you would have a purple ground, and yellow lights, dip a fine pencil in varniſh, and touch all the lighteſt parts of the folds thinly with *yellow maſticote*, and if need be, repeat it, for your colour muſt be very thin with varniſh; and when it is dry, glaze it over with *lake* and *ultramarine*, or *ſmalt* with varniſh once or twice, letting it dry. Then mix 3 degrees of a purple colour, of *lake*, *ſmalt*, and *white*, and lay them on as juſt before was directed.

The beſt blue:

Mix *ultramarine* with thick nut-oil, or if you cannot wait the drying, uſe varniſh inſtead of nut-oil, and glaze the garment 3 or 4 times over, letting it dry between every time; and being dry, mix 3 degrees of *ſmalt* and *white*, and very light, and with the cleareſt white go over the lighter folds, and the reſt as reaſon ſhall guide you.

Or if you are not willing to be at the charge of *ultramarine*, by the ſame method glaze it with fine *ſmalt*, and varniſh it as often as the former, and paint it with *white* and *ſmalt*. An ordinary blue is made with *white* and *ſmalt*, mixt in ſeveral degrees, but without glazing.

Yellow drapery:

For the lighteſt folds mixt *yellow oaker* and *white*, and *brown* *oaker* for the ſhadows; or if you would have it darker, *umber*; but do the other folds with *yellow oaker*, or with *white* mixt with *yellow* and *brown pink*.

The moſt beautiful yellow.

Glaze what you would have look pleaſant with *brown pink* once or twice, and the darkeſt parts oftener; when this is dry, touch the lighteſt folds with pale *maſticote*, and afterwards with *yellow maſticote*; and if any part requires a darker colour, with *yellow* or *brown pink*, and a little *umber*. When it is dry, paint all with *white* except the ſhadows.

Purple without glazing.

Make a mixture of *lake*, *ſmalt*, and *white*, with which paint your drapery, heightening and darkening the folds as before directed.

Purple drapery painted and glaz'd.

Glaze it thin once with *carmine* or *lake*, and when dry, paint it every where with *ſmalt* and *white*, either lighter or darker as you would have it; ſtill letting the lighteſt folds have a lighter colour than the other parts. On the contrary, you may have a purple, by glazing your figure over with *ultramarine* or *ſmalt*, and painting it with *lake* and *white*.

Ordinary red without glazing.

Paint the ſtrongeſt lights with *white* mix'd with *vermilion*, but the dark ſhadows with a dark or light *Red*, and the reſt with *vermilion*: For the lighteſt folds, mix light *red* and *white*: For dark folds *brown red*; for the other parts, light *red* only.

Another Red almoſt as good as the firſt.

Grind *red lake* finely in oil, temper it well with *drying oil* and *varniſh*, and glaze the garments over with this 2 or 3 times, let them dry, and then paint the lighteſt *white*; the darkeſt with light or brown *red*, and the reſt of the drapery with light *red* only.

The fineſt of all Reds.

Mix *carmine* with *varniſh* alone, and glaze the garment once over with it; and if you would have it very beautiful, 2 hours after do the ſame again, let it dry, paint all (except the dark ſhadows, which ſhould have *red*) with *vermilion* and *white*, or with *vermilion* only. If you can when dry ſee through the colours, touch the lighteſt folds over with clear *white*, and they will appear yet more beautiful.

To prepare prints without glaſs or ſtraining-frames, after the method of Mezzotinto.

Steep the print in warm water, as before directed for *Mezzotinto*; and if the paper be thick, let it lie 4 or 5 hours. After it has been ſufficiently ſoaked, take it out, and lay it on a plain ſmooth table-glaſs, or ſlate ſmooth, with the print-ſide downwards,

wards, and rub it carefully and lightly with a bit of *ſpunge*, rubbing it off, and peeling it ſo long, 'till the print appears tranſparent on the backſide; then paſte the back of the frame with common paſte, and put your print upon it, while it is wet.

Having done this, ſet it by to dry; and afterwards varniſh it on both ſides 4 or 5 times with *maſtich*, or *turpentine* varniſh, that you may againſt the light ſee the picture as plain on the backſide as on the foreſide.

To varniſh, poliſh, and finiſh pictures not laid upon glaſs.

They are done after the ſame manner as thoſe on glaſs, but if you have a mind to adorn, embroider, fringe, or the like with *gold* or *ſilver*; then touch the foreſide of the picture with ſhell-*gold* or *ſilver* in gum-water; or elſe after you have varniſh'd it 2 or 3 times with the beſt *white varniſh*, or ſome other, take the beſt *gold ſize*, with which hatch and lay it over with *gold duſt*, and with judgment touch and heighten all the ſtrongeſt lights, and deepen your ſhadows too on the foreſide.

This gives ſo much life to the work, that artiſts themſelves have ſometimes been deceiv'd, and took it for a piece of real painting

If now you have a mind to varniſh and poliſh any of theſe kinds of prints, lay on the colours fine and ſoft, and very even on the backſide, and ſet them by for a week, and then you may varniſh them.

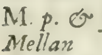
As to the diſpoſing and laying on of colours, it is the part of a limner's work to do that, which you will be directed to do in the article LIMNING, *&c.*

To varniſh theſe prints.

Take the beſt white *varniſh* (*ſee* VARNISH) and *maſtich varniſh* of each alike, mix them together, and with a fine camel's hair-bruſh varniſh the picture over 4 or 5 times carefully before the fire, (that the varniſh may not be chilled) and you will find it to have a very good and firm gloſs.

But if you would poliſh it after varniſhing; then you muſt uſe only the beſt *white varniſh* without any *maſtich varniſh* mixt with it, and waſh the print or picture over with it 5 or 6 times, after the manner that is done in *Japanning* (*which ſee*) and ſet the picture by for 4 or 5 days, to dry, and then poliſh it with *water* and *tripoli*, and at laſt clear it up as you do white *japan*.

M. G. ſtands for *Matthew Greuter*, engraver, born in *Argentina*, *anno* 1566.



MICARINO, an engraver in the *Gothic* manner, [illegible] this mark.

M. *inv.*
M. *p. & ſc.*
Mellan
Mel. ſc. Roma 1633.

Are all different marks of Claude Mel*lan* of *Paris*.

MI. AG. FLO. ſignifies *Michael Angelo* of *Florence*, i. e. *Buonoroti.*

MINES are places under ground, where metals, minerals or precious ſtones are found.

Therefore as the matter dug out of *mines* is various, the *mines* themſelves acquire various denominations; as *gold mines*, *ſilver mines*, *copper mines*, *iron mines*, *diamond mines*, *ſalt mines*, *mines of antimony of alum*, &c. As for *mines of gold* and *ſilver*, the richeſt and moſt celebrated are thoſe of *Peru* and *Chili* in *America*, *iron mines* are more abundant in *France* than elſewhere.

Copper mines are found chiefly in *Sweden* and *Denmark.*

Tin mines abound moſt in *England.*

Quickſilver mines in *Hungary* and *Spain.*

Diamond mines in *Golconda.*

Salt mines in *Poland.*

Metallic mines are chiefly found in mountains, though the reaſon thereof does not appear.

It is probable, plains may abound as much therewith, if people would dig deep enough.

But plains are commonly cultivated; and beſides that, the waters will ſcarce allow them to be dug. To this alſo may be added, that the metallic veins always run either horizontal or oblique; and for that reaſon are eaſier found on the ſides of eminences.

The metallic veins are commonly encompaſſed with a ſort of ſtone, peculiar to the mine, and are commonly accompanied with ſeveral *ſtrata* of different matters, as clay, gravel, rock, &c.

They who work in mines, know by the ſize and colour of the ſtones, when they approach the vein.

They diſcover that there is a *mine* in a mountain by the marcaſite or mineral ſtones falling from it; by the mineral taſte of the waters; by the quality of the exhalations raiſed from it; and by the difference between the earth over the *mines*, and that of the neighbouring parts in the cold time of ſpring and autumn; the froſt lying on the adjacent places, when it thaws about the mines.

To which may be added, that the grounds producing but little graſs, and that little, pale and colourleſs, is an indication of a *mine.*

Some pretend to diſcover *mines* by the ſole virtue of the hazle-tree, out of which they form a forked ſtick, which they call *virgula divinatoria*, which they ſay turns of itſelf in their hands; but differently, according to the different nature of the metals underneath.

This artifice was much talked of in *France* about 50 years ſince, and the corpuſcular philoſophy was called in to account for it; but it is now in little credit.

There are ſome *mines* wherein the metals are found at their firſt openings very crude and imperfect, which yet in time grow ripe and rich.

Alonſo Barba relates, that in *Potoſi* ſtones have been frequently thrown aſide, as not containing any thing conſiderable of metal; and yet have been found many years afterwards very full of it.

In an iſland in the *Tyrrhene* ſea, after the *Iron mines* have been exhauſted, they ſtop them up for about 10 years, at the end of which, they find them as rich as before.

MINIATURE } The firſt name comes from the *Latin* word
MIGNATURE } *minium*, red-lead, that being a colour much us'd in that kind of painting.

The ſecond *name* is *French*, and is ſo call'd from MIGNON, fine, pretty, on account of its ſmallneſs and delicacy.

Miniature is a delicate kind of painting, conſiſting of little points or dots inſtead of lines; uſually done on vellum, with very thin ſimple water-colours.

Miniature is diſtinguiſh'd from other kinds of painting by the ſmallneſs and delicacy of its figures, the weakneſs of the colours, and faintneſs of the colouring, and in that it requires to be view'd very near.

Thoſe colours that have the leaſt body, are the beſt and moſt commodious for painting in *miniature*; as *carmine*, *ultramarine*, *fine lakes*, and greens made of the juices of ſeveral kinds of herbs and flowers.

Painting in *miniature* is the niceſt and moſt tedious of others, being perform'd wholly with the point of the pencil.

There are ſome painters, which never uſe any white colour in *miniature*, but make the ground of the vellum ſerve to raiſe their figures; in which caſe the lights appear bright in proportion to the depth and ſtrength of the colours of the figures.

Others, before they go to work, give the vellum a light waſh with white lead well-prepared and purified.

When the colours are laid on flat without dotting, tho' the figures be ſmall, and the ground either *vellum* or *paper*, it is not called *miniature*, but waſhing.

The colours for *miniature* may be mix'd up with water of gum-*Arabick*, or gum-*Tragacanth*.

MINIATURE. Tho' in treating of other methods of painting in divers places of theſe volumes, much has been ſaid that may be applicable to this method of painting in *miniature*; yet I ſhall nevertheleſs ſpecify the characteriſticks of this kind of painting in particular.

1. It is in its nature more delicate than any of the other ſorts.
2. It requires to be beheld near at hand.
3. It cannot well be executed but in ſmall.
4. It is perform'd on vellum or ivory.
5. The colours are moiſten'd with gum-water only.

To ſucceed well in your attempts this way, you ſhould know how to draw very well: but as moſt, who concern themſelves in this art, are but ſeldom skill'd in drawing, yet would have the pleaſure of painting without the trouble of learning to draw; in which little progreſs can be made, without time, and much practice; ſome contrivances have been found to ſupply the defect in this point, by which a perſon is enabled to draw without knowing how to do it without them.

The firſt is call'd *calking*. To do which, you muſt blacken the backſide of the print or drawing you deſign to copy; and having lightly bruſh'd off the duſty particles, to prevent their adhering to, and fouling the clean vellum you deſign to uſe, lay your original on the vellum, and faſten it thereto with pins: or if inſtead of the backſide of the print, or drawing itſelf, you blacken only one ſide of a fair piece of paper, and put this paper between the print or drawing, and your clean vellum, then with a blunted pin or needle trace out the principal ſtrokes of the print or drawing, the out-lines and folds of the draperies, and whatever elſe need to be diſtinguiſh'd, bearing upon the pin or needle hard enough to leave the traces thereof on the vellum beneath.

Reduction is another way proper for thoſe who are not skill'd in drawing, yet notwithſtanding would copy a picture, or other piece that cannot be calked. It is done thus; you muſt divide the whole piece into many ſmall and equal ſquares, which you are to make with ſmall-coal if the piece be light, and with chalk if the piece be dark, that in either caſe your ſquares may be the more conſpicuous; then you muſt make the ſame number of ſquares, and of the ſame bigneſs, upon paper to draw upon: for if you undertook to do it, at once, upon vellum, as you might fail in the firſt attempt, you would run the hazard of ſpoiling your vellum by falſe ſtrokes; but the whole being duly adjuſted upon paper, we calk it upon vellum, as is ſaid above. The original, and the paper being thus mark'd out, obſerve what is contain'd within each ſquare of the piece you would copy, as a head, an arm, a hand, and ſo on, and where each is placed; all which you muſt punctually follow on your paper; and having thus obtain'd the ſituation of each part, join the whole together After this manner you may enlarge as well as diminiſh any piece you pleaſe, only by making the ſquares on the paper larger than thoſe on the original, or ſmaller, obſerving always that they are the ſame in number.

To copy a picture or any thing elſe, of the ſame ſize, take oiled paper dried, or gold-beater's skin; either of theſe we lay upon the piece, thro' which you may ſee the ſtrokes, which trace out with a crayon or pencil. Then take it off, and make it faſt to vellum or paper, and holding it up to the light, trace out what has been copied, upon the oiled paper or skin, either with a crayon or a ſilver pin.

By the help of a window, or a glaſs held up to the light, are copied all ſorts of prints, deſigns, and other pieces, upon paper or vellum, by fixing them to the paper or vellum you intend to draw upon. This is an eaſy and good contrivance for copying of the ſame ſize.

If you would make the piece look a contrary way, turn the printed or drawn ſide of the original towards the glaſs, and faſten the paper or vellum to the backſide of it.

There is alſo a good way to take an exact copy of a picture, which is in oil-colours. Which is, with a pencil and ſome lake mix'd up with oil, to trace out all the principal ſtrokes of the picture, and applying thereto a paper of the ſame ſize; then paſs your hand over it, and the ſtrokes of the lake will take the paper, and appear thereon, which you may calk as before. Be mindful to clean the picture with the crumb of bread before the lake dries.

Alſo, to the ſame end, uſe coal-duſt contain'd in a piece of fine linnen, wherewith pounce the piece you would copy, having firſt prick'd the principal ſtrokes of it, and faſtened a piece of vellum or paper to the wrong ſide of it.

But for one, who has no hand at drawing, there is a more ſure and eaſy way than any afore-mentioned, by the help of a mathematical inſtrument, or compaſs, as it is ſometimes call'd, which is commonly compos'd of 10 pieces of wood like rulers, about the ſixth of an inch thick, and half an inch broad. As for their length, it may be a foot, more or leſs, according to the ſize of the piece you would copy. But that you may not miſtake, here follows a repreſentation of it. *See the Plate.*

The board A muſt be deal, cover'd with a cloth of ſome ſort or other, for the more convenient faſtening of the piece you would draw, and what you would draw upon. Then plant the compaſs with a large pin run through the foot B. If you would draw in ſmall, you muſt place the original at the firſt foot C, and the paper or vellum you would draw upon, near to the foot B, removing it to a greater or leſs diſtance, according as you would have your piece greater or ſmaller.

To draw in great from ſmall, you need only ſhift your copy to the place of your original, putting the former at C, and the latter at B; and in each caſe you muſt put a crayon or a ſilver pin into the foot over your vellum, and a pin ſomewhat blunted, into the foot over your original, with which you are to follow all the lines, while you bear with your other hand gently upon the pin or crayon on your vellum. If one or the other be well-fitted in the foot, you need not bear thereon at all.

You may draw alſo of equal ſize, but to do that you muſt plant your compaſs in a different manner, it muſt be fix'd with a pin or axis run through the centre D; and the original and e copy muſt be at an equal diſtance from the centre. In a word, you may draw ſeveral copies at a time, and each of a different ſize, or equal to each other, juſt as you pleaſe.

Theſe are all the helps needful to be known by thoſe, who are unskill'd in drawing. When your piece is sketch'd out upon the vellum, you muſt with a pencil of thin *carmine* run over all the ſtrokes, that they may not be defaced in working. This done, clean your vellum with crumb of bread.

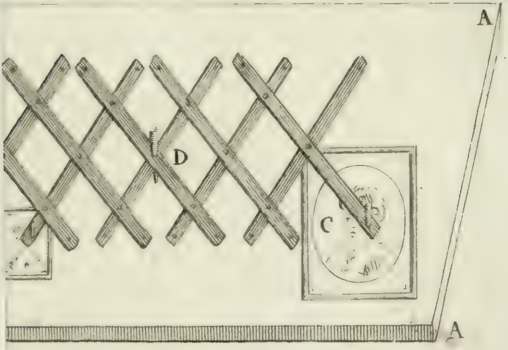
Your vellum muſt be glued to a copper-plate, or to a piece of thin board, exactly of the ſame ſize with your intended piece, to ſtretch it upon; but your vellum muſt be a finger's breadth larger every way than what you glue it to, for the way is to lap it round behind, and there glue it, not offering to lay any glue under your paint, not only for fear of ſome deformity, but alſo becauſe of the impoſſibility of taking it off again. But firſt of all you muſt moiſten the fair ſide of the vellum with a piece of fine wet linnen, and put a piece of white paper to the backſide of it, and ſo apply it to the plate or piece of board, and ſtretching it thereon equally in all directions, glue it as juſt now directed.

The colours us'd in miniature *painting are,*

Carmine,
Ultramarine,
Lake of all ſorts,
Vermilion,
Black lead,
Brown red,
Maſticote pale,
Maſticote yellow,
Indigo,
Ivory-black,
Lamp-black,
Spaniſh brown,
Umber,
Gall-ſtone
Brown oaker,
French pink,
Orpiment,
Gamboge,
Naples yellow,
Bladder green,
Verditer,
Sea-green,
German-aſhes,
Flake-white,
and
White lead.

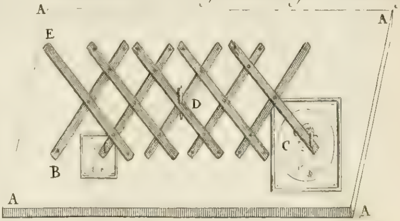
As

hematical Inſtrument for drawing



Vol. II. Plate VII.

Mathematical Instrument for drawing



As all terrene Colours, and other groſs ſubſtances, are too coarſe for fine works, how well ſoever they may be ground, by reaſon of a kind of ſand which ſtill remains; the fineſt particles may be ſeparated, by tempering your colour in a cup of fair water. Having ſtirred it well with your finger, and the whole being thoroughly ſoaked, let it ſubſide for a while, and then pour it off, by inclination, into another Veſſel; and what you pour off will be the fineſt particles, which you muſt afterwards ſet to dry. The colour thus prepared, muſt, when you uſe it, be tempered with gum-water, as ſhall hereafter be directed. This is a good contrivance, and perfectly calculated for the delicacy of ſmall works.

Greens, blacks, greys, and yellows, theſe colours being mixed with a little of the gall of ox, carp, or eel, eſpecially of this laſt, it will give them a luſtre and vivacity not natural to them. You muſt take the gall of eels when they are skinned, and hang them by a nail to dry; and when you uſe any, you muſt ſteep it in brandy, and mingle ſome of it with the colour already tempered. It will cauſe the colour to take the vellum more ſtrongly, which it will not eaſily do when the vellum is greaſy; beſides, the gall prevents its peeling.

Yellow oaker, brown red, umber, and ultramarine; theſe are colours which purify by fire, all others blacken thereby: but if you burn the abovenamed colours with a ſtrong fire, they change; for the brown red turns yellow, the yellow oaker turns red, the umber reddens alſo, and white lead becomes of a lemon colour, and is called Maſticot. Obſerve, that the yellow oaker being burnt, becomes ſofter and kinder by far than before, and more ſo than the pure brown red: and reciprocally, the brown red being burnt, becomes more ſoft and agreeable than the pure yellow oaker; they are both very good. The fineſt and moſt pure ultramarine burnt in a red-hot ſhovel, becomes much more brilliant than before; but refined after this manner, it diminiſhes, and becomes coarſer, and harder to work with in Miniature.

Theſe colours are tempered (in ſea-ſhells, or in ſmall ivory cups made on purpoſe) with water, in which hath been before diſſolved gum-arabick and ſugar-candy; for example, in a good glaſs of water put the quantity of your thumb of gum-arabick, and half that quantity of ſugar-candy. This laſt prevents the colours from ſcaling when applied, which they commonly do without it, or when the vellum is greaſy.

This gum-water muſt be kept in a bottle always ſtopped cloſe, and never dip a coloured pencil into it, but take it out with a quill, or ſome ſuch thing.

Some of this water you muſt pour into a ſhell, together with the colour you uſe, and temper them with your finger, till the whole be very fine. If you find your colour too hard, leave it to ſoften in the ſhell before you temper it, then ſet it to dry, and ſo do by all, except the iris-green, and bladder-green, and gamboge, which muſt be tempered with water only: but ultramarine, lake, and *Spaniſh* brown, muſt be more gummed than other colours.

If you uſe ſea-ſhells, you muſt firſt ſoak them for two or three days in water, then ſcower them well in hot water, to clear them of a certain ſalt, which ſpoils the colours, if not waſhed away.

To underſtand when your colours are ſufficiently gummed, you need only make a ſtroke with your tempered colours upon your hand, which will immediately dry: if they break and ſcale, they are too much gummed; and if they rub out by paſſing your finger acroſs them, they are not gummed enough. Again, if you lay your colours upon vellum, and upon trial find that the colours come off upon your finger like duſt, it ſhows they are not enough gummed, and therefore you muſt put more gum into the water you uſe: take care alſo, that you put not in too much, for that will have a hard and a dry effect, your colours will be glutinous and ſhining: thus the more they are gummed, the darker they will be; and if you would have a greater body to a colour than it naturally has, you need only gum it well.

You muſt have a ſmooth ivory pallet, of the ſize of your hand, upon which you muſt diſtribute the colours for your carnations or fleſh, after this manner: In the middle you muſt put a quantity of white, well ſpread out, becauſe it is the colour moſt reſorted to, and from the left to the right of it, along the ſide, you muſt place the colours following;

Maſticot,
Orpiment,
Oaker,
A green, made of ultramarine, *french* pink, and white, of each equal parts.

A blue, made of ultramarine, indico, and white. It muſt be very pale.
Vermillion,
Carmine,
and
Black.

On the other ſide of your pallet you muſt alſo ſpread out ſome white, as before; and when you are to paint draperies, or any thing elſe, you muſt near it put the colour you intend to make them of, therewith to work as I ſhall hereafter inſtruct.

Good pencils are of great importance to the work; to chuſe which, wet them a little, and twirl them on your finger; if they keep their point, they are good, but if they break into many points of different lengths, they are good for nothing, particularly for *ſtippling*, (this is a term in *miniature* for making ſmall points or dots) but above all for carnations: when they are too ſharp pointed, with only four or five hairs ſticking out beyond the reſt, you muſt blunt them carefully with a pair of ſciſſors. It will be proper to have them of two or three ſizes; the largeſt may ſerve for your grounds, the middling for drawing and colouring, and the leaſt for finiſhing.

To keep your pencil to a good point, you muſt often put it between your lips, and preſs it, and moiſten it with your Tongue, though you have juſt taken up colour with it; for if you have taken up too much, you by this means diminiſh it, and correct your error. You need not fear any harm from ſo doing; all the *miniature* colours (except orpiment, which is a poiſon) have nothing diſpleaſing to the taſte, or noxious in themſelves, when prepared for uſe. You muſt be careful to repeat this very often when you are ſtippling, or finiſhing, particularly carnations, that your ſtrokes may be neat and clear. As for draperies and other things, whether in the drawing, colouring, or finiſhing of them, you need not be ſo nice: in this caſe, it will be ſufficient if you make your point upon the edge, or rim of your ſhell, or upon the paper you reſt on when you are at work.

To work as you ought, you ſhould be in a room that has but one window, which you muſt place yourſelf very near to, with a table and a desk almoſt as high as the window, and ſo fix yourſelf that the light may always ſtrike in on the left hand of you.

When you would lay on a colour equally ſtrong every where, as a ground, for example, you muſt make your mixtures in ſhells, and take care that you have enough for that purpoſe; for if they fall ſhort, you will be put to it to prepare them of exactly the ſame degrees of light or ſhade.

Having ſpoke of vellum, pencils, and colours, I ſhall next ſhew how they are to be uſed. Firſt of all, if you would paint fleſh, or drapery, or aught elſe, you muſt begin by sketching or drawing with large, bold, yet clear ſtrokes, like thoſe who paint in oil: your lights muſt, at firſt, be ſomething brighter, and your ſhades not quite ſo dark as is required for finiſhing; becauſe in ſtippling thereon you ſtrengthen the colour, which if too dark at firſt, would in the finiſhing become too deep.

There are ſeveral ways of ſtippling, or ſhading, as it may be alſo called; every painter has his manner; ſome do it with round points, others make them longiſh, others again hatch with fine ſtrokes croſſing each other in all directions, till the whole appears as if ſtippled, or wrought with points; this laſt method is the beſt, boldeſt, and ſooneſt perfected, wherefore I adviſe all painters in *miniature* to practiſe it, and to accuſtom themſelves betimes to be rich, mellow, and ſoft in their work; that is, that the points may be loſt in the ground they are wrought upon, and appear but juſt enough to evince that the piece is ſtippled. Hard and dry is the reverſe of this manner of working; which proceeds from ſtippling with a colour too dark for the ground, and too dry a pencil, which gives the work a rude caſt or favour.

Endeavour alſo to drown your colours into each other, that no line of ſeparation may be ſeen between them, and ſoften your ſtrokes with the colours on each hand of them, ſo as to be equally blended with and confounded into each.

When your pieces are finiſhed, heightening them a little has a fine effect; that is, ſtrengthening the lights with touches of a paler colour than at firſt, which muſt be ſoftened away into the reſt.

When the colours are dry upon your pallet, or in your ſhells, temper them with pure water, and when you perceive they have loſt their gum, which you will find by their eaſily rubbing out, either on your hand or vellum, as has been ſaid before, temper them with gum-water till they are in good order.

There are ſeveral ſorts of grounds for pictures and portraits: ſome are quite brown with *Spaniſh* brown, umber, *&c.* with a little black and white; others are more yellow, being mixed with a good deal of oaker; and others are upon the grey with indico.

For this work, make a waſh of the colour or mixture you propoſe, or according to the picture or portrait you are about to copy, and with this thin waſh ſoak or prime your vellum: this done, lay it on thicker, and ſpread it out boldly, but uniformly, as faſt as you can, never touching twice upon one place till it be dry, becauſe the ſecond touch carries off what the firſt laid on, eſpecially if you bear a little hard upon the pencil.

There are yet other dark grounds, and theſe are of a greeniſh colour; which are moſt in uſe, and beſt adapted for all ſorts of figures and portraits, becauſe they ſet off the carnations to great advantage, and are very eaſily laid, there being no occaſion to ſtipple them, as muſt often be done to the others, which are ſeldom uniform at firſt, whereas theſe hardly ever miſs: you muſt prepare them with black, *French* pink, and white, mingled together in different proportions, according as you would have your ground lighter or darker: lay it on thin at firſt, then thick, as before directed. You may mix up grounds of other colours, but theſe are the moſt common.

If you are about to paint a Saint upon one of theſe grounds, and would make a ſmall glory round the head of your figure, you muſt lay on your ground very thin in that part, or even leave it naked, eſpecially juſt where the glory ought to be brighteſt: at firſt lay on a pretty thick mixture of white, and a little oaker, and as you move off from the head, let your oaker prevail more and more, and that it may die away into the ground, hatch it boldly with a pencil; and as you purſue the round of the glory, take ſometimes the colour of the glory, and ſometimes that of the ground, mixing ſome white, or oaker when it is rather too dark, and this continue till they are utterly confounded or ſcumbled in each other, and that no ſeparation between them be diſtinguiſhable.

To make a ground all of glory, you firſt lay a bright mixture of a little oaker and white, adding more and more of the firſt, as you draw more and more towards the extremities of the intended picture; and when the oaker happens not to be dark enough (for you muſt go on darkening and darkening) add gall-ſtone, then carmine, and at laſt *Spaniſh* brown. This ground you muſt lay in ſuch manner, that the different degrees of darkneſs may, as much as poſſible, inſenſibly increaſe and ſtrengthen. Then you muſt ſtipple the whole with the ſame colours to blend it nicely together, which is tedious and difficult enough; particularly when there are clouds of glory in your ground. You muſt ſtrengthen their lights as you remove from the figure, and finiſh ſtill with ſtippling, ſwelling out the ſaid clouds, whoſe lights and ſhades muſt be imperceptibly loſt into each other.

For a day-sky, you muſt mingle ſome ultramarine with a great deal of white, and lay it on as ſmooth and uniform as poſſible, with a large pencil and broad ſtrokes, as for grounds, laying it on paler and paler as you deſcend towards the horizon, which you muſt make of vermillion and mine-de-plumb and of white, of the ſtrength as finiſhes the sky, and even a little weaker; artfully blending the blue and red, which muſt come down to the front, mingling, at laſt, gall-ſtone and a good deal of white, ſo that the mixture may be paler than the firſt; and all this muſt be ſo laid on, that no ſeparation be ſeen of the colours of this sky.

When there are to be clouds in your sky, you need lay on no blue where they are to be, but ſketch them out (if they are reddiſh) with vermillion, gall-ſtone, and white, together with a little indico; and if they happen to be darker, you muſt uſe a great deal of this laſt, making the lights of one and the other with maſticot, vermillion, and white, the proportions of each more or leſs, according to the degree of ſtrength you would give them, or according to the original before you, ſwelling out the whole with ſtippling; for it is a hard matter to lay them on uniformly in the drawing: and if the sky be not ſufficiently uniform, you muſt ſtipple that likewiſe.

N. B. You may alſo cover the places of your clouds in laying on the ground of the sky, heightening the lights with a good deal of white, and deepening the ſhades: this is the moſt expeditious way.

A ſtormy or night-sky, is made with indico, black, and white mixed together, which is laid on like the day-sky. To theſe add vermillion, oaker, and brown red, for the clouds, whoſe lights muſt be of maſticot, or mine-de-plumb, and a little white, ſometimes redder and ſometimes yellower, as neceſſity ſhall require: and when it is a ſtormy sky, and that in ſome parts you ſee lights, whether blue or red, you may order them as in a day-sky, ſcumbling the whole together in drawing and finiſhing.

Pink is of no particular claſs, and eaſily takes the qualities of the others; ſo you may make it dark and heavy, by mixing it with colours that are ſo; and on the contrary, faint, weak, or fading, by mingling it with white or blue.

Brown red, umber, dark greens, and biſtre, are the heavieſt and next to black.

All maſters who are verſed in perſpective, and the harmony of colours, always take care to uſe their ſtrong colours for their fore grounds, and the weaker for diſtant views. As for the union of colours, you may by mixing them together underſtand the friendſhip or averſion they have for each other, and from thence take your hints, and conſult the pleaſure of the eye.

For laces, point, and the like, lay on firſt a mixture of blue, black, and white, as for linnens; then heighten the pattern, flowers, or flouriſhes, with white only; then ſhade and finiſh with the firſt colour. When they are upon fleſh, or any thing elſe which you would have ſeen through them, finiſh what is under them, as if you intended to lay nothing thereon, and then lay on the lace or point, with pure white, and finiſh with the other mixture.

In painting a fur, lay on a ground, as for drapery, according to the colours of it, and then ſhade by the ſame rule; and having done, inſtead of ſtippling, draw fine ſtrokes, this way, that way, and t'other way, according to the grain of the fur you aim at: heighten the lights of a brown fur with oaker and white, and thoſe of a light fur with white, and a little blue.

For a building, if it be ſtone, take indico, biſtre, and white, for your dead colouring, or ground, and then ſhade with leſs of this laſt, and more of the biſtre than indico, according to the colour of the ſtones you would make: you may alſo add a little oaker, both to begin with and to finiſh. But to add ſtill to its beauty, you muſt here and there, eſpecially for ruins, make yellow and blue tints, the former of oaker, and the latter of ultramarine, always mixing them with white; whether for your firſt ground, provided they appear through what you lay upon them, or whether you uſe them at laſt, finiſhing and blending them with the reſt.

For wooden buildings, they are left to your diſcretion, as being of different kinds; but the moſt common way is to begin with a mixture of oaker, biſtre, and white, and finiſh with no white, or with very little; and when the ſhades require ſtrength, with biſtre only. For others, you may add ſometimes vermillion, and ſometimes green, or black; in a word, according to what you intend you muſt mix your colour, and finiſh with ſtippling, as for draperies and all the reſt.

The inſtructions laid down for the mixtures of different tints for the finiſhing of fleſh, and other things, may be of particular uſe when you work after prints, where you have nothing before you but black and white, and they will not be much more unuſeful when you begin to copy after paint, though you know not how to handle your colours, and happen not to be acquainted with their power and effect. For there is this difference between *miniature* and painting in oil, that in this laſt the colours were taken off from the pallet, juſt as they appear to you in the picture; ſo that in this caſe, you have nothing to conſult but ſuch a light and ſuch a ſhade. Now it is far from being the ſame in *miniature*, where often it happens that the laſt colouring you lay on does not preſerve its colour, but partakes of the colour beneath, or rather, the one and the other compoſe a new one, to form the effect you aim at; for altho' it be white, green, carmine, blue, orpiment, biſtre, and the like, which form your colouring, they nevertheleſs would not produce it, if they were mixed together; for it is by proceeding from one to the other that you can ſucceed: and when you have a piece of this kind before you, without having ſeen how it is done, you muſt be a conjurer at leaſt, to gueſs at the order and method it was done in, without the help of a maſter or a book.

MINIUM, or RED-LEAD, is as heavy and ſtrong a colour as moſt we have; but when prepared, is the moſt delightful one; that is, when it is well waſhed and cleanſed of its more weighty parts, which cauſe it to turn black.

Mr. *Boyle* directs the preparing or cleanſing it as follows; Put four ounces of it in a quart of rain-water; then ſtir it, and pour off the water immediately, and let it ſettle to the bottom of every cup or glaſs you pour it into; then pour off that water, and in a day's time you will have the colour dry, and as fine as you can deſire; then put a little *gum-arabick* into each glaſs or cup, and as much water as will moiſten each of them.

Any of theſe may be afterwards uſed with gum-water, but if the gum you put in at firſt make it ſtrong enough to glaze it, then you need add to it only common water; and according as your colour is leſs or more gummed, uſe leſs or more gum-water; for of it ſelf it is a dead colour.

When you uſe this colour, touch it gently on the *yellow* mentioned, made of *yellow berries*, into the light ſide, and if it wants a ſhade, you may put a little vermillion upon it; but *vermillion* is too heavy to paint with, when you would illuminate prints, becauſe it hides the ſhades of the engraving; though ſometimes they had better be hidden than appear.

Some generally ſhade this *minium* or *red-lead* with *carmine*, which gives it a fine effect, and renders it equal to the brighteſt red flower that is to be ſeen, leaving ſtill the lights uncoloured, only daſhing a little way into the lights with the *minium*.

When the *carmine* has ſhaded the *minium* or *red-lead*, it may be ſhaded again with *lake* in the ſtrongeſt part, to bring it to a deeper *red*.

MIRROIRS MIRROURS } [in *catoptricks*] is a name given to all poliſhed bodies, which are impervious to the rays of light, and which conſequently reflect it equally; but in the more confined ſenſe of the word, it is peculiarly uſed to ſignify plain or ſmooth ſurfaces of glaſs, ſilvered on the backſide, which exhibit the images of objects oppoſed to them.

The DOCTRINE of MIRROURS.

1. *Light reflected from any* mirrour *or* looking-glaſs, *makes the angle of incidence equal to that of reflection.*

Hence a ray of light falling perpendicularly on the ſurface of a mirrour or looking-glaſs, will be reflected back upon itſelf, as is found by experience it actually does.

Therefore from the ſame point of a *mirrour*, there cannot be ſeveral rays reflected to the ſame point, nor can the ray be reflected into two or more points.

2. *From every point of a* mirrour *are reflected rays thrown on it from every point of a radiant object.* Since then, rays coming from different parts of the ſame object, and ſtriking on the ſame point of the object, cannot be reflected back to the ſame point; the rays which flow from different points of the ſame radiating object are again ſeparated after reflection, ſo that each point ſhews whence it came.

Hence it is, that the rays reflected from *mirrours* exhibit the objects to view.

Hence alſo it appears, that rough, uneven bodies muſt reflect the light in ſuch manner, as that rays coming from different points, will be blended or thrown confuſedly together.

Mirrours are either *plain*, *concave*, *convex*, &c.

Plain mirrours are ſuch as have flat ſurfaces, as *looking-glaſſes*.

The laws and phænomena of plain mirrours.

I. *In a* plain mirrour, *every point of an object is ſeen in the interſection of the cathetus of incidence with the reflected Ray.* Hence,

1. As all the reflected rays meet with the cathetus of incidence; by whatever reflected rays the radiating point be ſeen, it will ſtill appear in the ſame place: And conſequently any number of perſons, viewing the ſame object, in the ſame *mirrour* or *looking-glaſs*, will all ſee it in the ſame place behind the *mirrour*. And hence it is, that the ſame object has only one image; and that we don't ſee it double with both eyes.

2. The diſtance of the image from the eye is compounded of the ray of incidence, and the reflected ray; and the object radiates reflectedly in the ſame manner, as it would do directly, were it remov'd into the place of the image.

II. *The image of a radiant point appears juſt ſo far behind a plain* mirrour, *as the radiant point is before it.* Hence, 1. If a *mirrour* be plac'd horizontall, the radiating Point will ſeem ſo much below the horizon, as it is really elevated above it: and conſequently erect Objects will appear as if inverted; and therefore men ſtanding on their feet, will appear as if ſtanding on their heads.

Or if the *mirrour* be faſtened to the cieling of a room, parallel to the horizon, objects on the floor will appear above the cieling, as much as they are really below it; and that upſide down.

III. *In a plain* mirrour, *the images are perfectly ſimilar, and equal to the objects*; and hence their Uſe, as looking-glaſſes.

IV. *In a plain* mirrour, *things on the right hand appear as on the left, and thoſe on the left as on the right.*

Hence alſo is produc'd a method of meaſuring any height that is inacceſſible by means of a plain mirrour.

Thus a *mirrour* being plac'd horizontally on the ground, retire from it, 'till ſuch time as the top of a ſteeple, tree, or any other high object may be ſeen in it, and then meaſure the height of the eye, the diſtance of the ſtation from the point of reflection, and the diſtance of the foot of the ſteeple, *&c.* from the ſame, and then find a fourth proportional to theſe three, and it will be the height ſought.

V. *If a plain* mirrour *be inclin'd to the horizon in an angle of* 45 *degrees; an object, which is perpendicular to it, will appear parallel, and an horizontal object perpendicular.*

And hence the eye being plac'd beneath the *mirrour*, the earth will appear perpendicularly over it; or if it be plac'd over it, the earth will appear perpendicularly under it.

Hence alſo a globe deſcending down a plane a little inclin'd, may, by means of a *mirrour*, be exhibited or ſhewn, as if mounting up a vertical plane, to the great ſurprize of ſuch as are unacquainted with catoptricks.

And hence is a method, by which a perſon may repreſent himſelf as if flying.

For a *mirrour* or *looking-glaſs* inclin'd to the horizon, under an angle of 45 degrees, it will repreſent vertical objects, as if horizontal. Conſequently a large *looking-glaſs* being ſo poſited; as you advance toward it, you will ſeem to move horizontally; and nothing will be wanting to the appearance of flying, but to ſtrike out the arms and legs.

But this is to be obſerv'd, that as the floor is elevated along with you, your feet will ſtill be ſeen to walk, as along a vertical plane; therefore to deceive the eye entirely, it muſt be kept from the feet.

VI. If the object be parallel to the looking-glaſs, and be equally diſtant from it, with the eye, the reflecting line will be half the length of the object.

And hence to be able to ſee the whole Body in a looking-glaſs, its heighth and breadth muſt be half your heighth and breadth; and conſequently the height and breadth of any object to be ſeen in a *looking-glaſs* or *mirrour*, being given, the height and breadth of the *mirrour*, in which the whole object will appear, at the ſame diſtance with the eye, is alſo given.

Hence alſo as the length and breadth of the reflecting part of the *looking-glaſs* are ſub-duple of thoſe of the object to be reflected; the reflecting part of the *looking-glaſs* is to the ſurface reflected in a ſub-quadruple ratio.

Conſequently the reflecting portion being a conſtant quantity; if in any place you ſee the whole body in a *looking-glaſs*, you will ſee it in every other place, whether you approach nearer, or recede farther from it.

VII. If ſeveral *looking-glaſſes*, or ſeveral fragments, or pieces of a *looking-glaſs* be all diſpos'd in the ſame plane, they will only exhibit an object once.

VIII. *If two looking-glaſſes be join'd at an angle, the eye plac'd within that angle will ſee the image of an object plac'd within the ſame, as often repeated as there may be* catheti (*or ſides*) *drawn, determining the places of the images, and terminated without the angle.*

Hence as the more *catheti* terminated without the angle, may be drawn, as the angle is more acute; the acuter the angle, the more numerous the images.

Further, if the *looking-glaſſes* be plac'd upright, and ſo contracted; or if you retire from them, or approach to them, 'till the images reflected by them coaleſce, or run into one, they will appear monſtrouſly diſtorted.

Thus if they be at an angle ſomething greater than a right one, you will ſee it with only one eye; if the angle be leſs than a right one, you will ſee 3 eyes, 2 noſes, 2 mouths, *&c.*

At an angle ſtill leſs, the body will have 2 heads.

At an angle ſomething greater than a right one, at the diſtance of 4 feet, the body will be headleſs, *&c.*

And if the glaſſes be plac'd the one parallel to the horizon, and the other inclin'd to it, or declin'd from it, it is eaſy to perceive, that the image will be ſtill more romantick.

Thus one being declin'd from the horizon to an angle of 144 degrees, and the other inclin'd to it; a man ſees himſelf ſtanding with his head to another's feet.

Hence it appears how *mirrours* or *looking-glaſs* may be manag'd in gardens, *&c.* ſo as to convert the images of thoſe near them into monſters of various kinds: and ſince glaſs *mirrours* will reflect the image of a lucid object twice or thrice; if a candle, *&c.* be plac'd between the *mirrours*, it will be multiply'd an infinite number of times.

Wolfius relates, that an artiſt of *Dreſden* in *Saxony* made *burning mirrours* of *wood*, larger than thoſe of either M. *Schirnhaus* or *Villette*, which had effects at leaſt equal to any of them.

And we are inſtructed by *Traberus* how to make burning *mirrours* of *leaf-gold*, *viz.* by turning a concave, and laying the inſide over equally with pitch, and covering that with ſquare-pieces, 2 or 3 fingers broad, faſtening them on, if need be, by the fire.

He tells us, that very large *mirrours* may be made of 30, 40, or more concave pieces, artfully join'd in a turn'd wooden diſh, or skuttle, the effects of which will not be much leſs than if the ſurface was continuous.

Zahnius informs us, that one *Newman*, an engineer at *Vienna*, did in the year 1699, make a *mirrour* of paſte-board covered on the inſide with ſtraw glued to it, by which all kinds of metals, *&c.* were melted.

How to make ſpherical concaves and convex glaſſes, commonly call'd BURNING MIRROURS.

The uſe of theſe glaſſes is to unite the ſun-beams, and to kindle a *flambeaux*, wood, or any combuſtible matter. By them metals alſo may be diſſolv'd in a little time, as eaſily as in a crucible in a furnace.

The whole myſtery of making them is to have the moulds of a round ſhape, otherwiſe they have but a very weak effect on the ſun-beams; the moulds muſt be ſo exactly made, that neither ſide ſhall differ from the other.

To make the *convex glaſs*, your mould muſt be convex, and the convexity of it muſt be made by the ſphere, according as you would have it greater or leſſer; and it is from this ſphere the convexity of the *mirrour* muſt be taken: As for inſtance, take a ſphere of what bigneſs you pleaſe, divide it equally, and alſo one of the hemiſpheres in 3 equal parts, by planes parallel to the great circle; the convex ſegment ſhall then be the ſixth part of the whole ſphere, and the meaſure of your *mirrour*.

If you would make the *mirrour* a *convex glaſs*, you muſt have *concave moulds*, and theſe you may do two ways.

Take the two concave ſides of the mould, and cloſing them together equally, as the founders do their frames; pouring through the mouth of the mould your cryſtal metal, letting it fill the mould, and afterwards cool.

Another way is to take two *concave mirrours*, and joining their faces, ſolder them well all about, only leaving a ſmall orifice, through which you may fill it with ſome *aqua vitæ*, and then ſtop the whole, and frame them with wood or metal.

This ſort of *mirrour* has a more ready influence on the ſun-beams than any other: Theſe glaſſes muſt be very well-poliſhed.

Theſe *burning-glaſſes* may be made parabolick, or ſpheroidal, and ſuch have ſtill a better effect than the ſpherick; you muſt proceed as to the moulding them, as you do in the former; you muſt obſerve a juſt proportion in doing them: for when they are too much rais'd, they are hindered by their depth from having a good effect, and upon this depends the whole nicety of the art.

To make metal MIRROURS, concave ſphericks or parabolicks, uſually call'd *ſteel burning mirrours*. The moulds for them are prepar'd as for the former, whether *concave* or *convex*; and as for ſuch as are flat, they may be caſt in ſand.

The metal of theſe *mirrours* is call'd ſteel, becauſe it is of a very hard and bright compoſure and temper; and the harder the metal, the better the *mirrour*, and the eaſier to poliſh. The whiteneſs of it is very convenient for giving the quality of burning, and not only for that, but ſeveral other uſes; if it be too red or black, it alters the true diſtance and colour of its oppoſite objects, they may therefore make them of the following compoſition.

Take 3 pounds of *copper*, 1 pound of fine *tin*, half an ounce of *white arſenick*, and an ounee of *tartar*; firſt melt the *copper*, then put the *tin* in, immerg'd in the *copper*, or elſe it will fume away in the melting, and leave the *copper* behind; theſe 2 being well melted together, then caſt in the *arſenick* and *tartar*; after this, let all melt for 2 or 3 hours, and then mould it.

Some perſons doſe with the former weight of *copper* and *tin*, half a pound of *white arſenick*; others, inſtead of *white arſenick* put in a quarter of a pound of *antimony*.

Another. Take a pound of well-refined *copper*, melt it, then add 3 pounds of fine *tin*; as ſoon as theſe are melted, add 6 ounces of *red tartar* calcin'd, 1 ounce of *ſalt-petre*, 2 drachms of *alum*, and 3 ounces of *arſenick*; let theſe melt for 3 or 4 hours, that the ſalts may evaporate, and the ſtuff will be fit for moulding. This ſtuff is more ſolid and hard than the other.

Another more excellent compoſition for *concaves*, on account of the hardneſs and compactneſs of it, and it being more capable of poliſhing, is conſequently much better than the others.

Take plates of *copper* 1 pound, cut them ſmall, that they may be put into a crucible, imbibing them with oil of *tartar*; then powder a quarter of a pound of *white arſenick*, and put them layer upon layer 'till the crucible is full; and afterwards pour on them *linſeed-oil*, to cover the *arſenick* and the *copper*; head and lute the crucible well, and when the lute is dry, ſet it in a ſand-furnace, letting the ſand ariſe no higher than the head: heat the furnace very gently, 'till it arrive to a juſt degree, and the oil begins to evaporate. By this time the oil will prepare the *copper* for retaining the *arſenick*, which muſt enter the *copper*, as eaſily as oil does leather; ſet it again on freſh ſand, and increaſe the heat of the furnace, giving it the ſame degree as before, until the oil evaporate and boil up; then take off the crucible, let it cool and break it, and you will find the *copper* of ſeveral colours; and would be much better, if inſtead of *arſenick* you made uſe of *orpiment*.

Take of this *copper* one part, of *latten* 2 parts, melt the *latten* on a ſmart fire, and then put in the *copper*; when they are well melted, caſt the metal drop by drop into a glaz'd veſſel, full of water, over which lay a bruſh or broom for the ſtuff to go through: thus you will have a metal not to be touch'd with a file, nor brittle, and as good as any ſteel for all uſes whatſoever.

Take of this hard metal 3 parts, and the beſt *tin* of *Cornwal*, which has no lead in it one part, melt the metal before you put in the *tin*; and after theſe are well incorporated, you may fill your moulds, *&c.*

This is the beſt compoſition of all, for making of all ſorts of theſe *mirrours*; it is white, hard, not brittle, and very eaſily poliſh'd, exceeding fine.

The following compoſition given by *Wolfius*, is by ſome recommended as the beſt that is known for making *mirrours*.

Melt one part of *tin*, and another of *marcaſite* together, and to the melted matter add 2 pounds of *mercury* : as ſoon as the *mercury* begins to evaporate into ſmoke (which it preſently does) the whole compoſition is to be thrown into cold water, and when cold, the water decanted off.

The mixture is then to be ſtrain'd through a linnen cloth, 2 or 3 double; and what is thus ſecerned, poured into the cavity of a glaſs ſphere: this ſphere is to be turn'd gently round its axis, 'till the whole ſurface is cover'd; the remainder being reſerv'd for future uſe.

If the ſphere were of coloured glaſs, the *mirrour* will be ſo too.

The Phænomena of CONCAVE MIRROURS.

1. Since the image of an object, included between 2 lines, at a diſtance leſs than one fourth of the diameter, may exceed the juſt heighth and breadth of the object; nay, may be made of any magnitude, how big ſoever: Objects plac'd between the focus and *mirrour*, muſt appear of enormous magnitudes in *concave mirrours*; the image being ſo much the greater in the *concave mirrour* as it is leſs in the *convex*.

2. In a *convex mirrour*, the image of a remote object appears nearer the centre than that of a nearer object: therefore in a *concave mirrour*, the image of an object remote from the *mirrour*, appears at a greater diſtance than that of a nearer object, provided the diſtance of the object from that of the centre, be leſs than a fourth part of the diameter.

3. In a *convex ſpeculum*, the image of a remote object is leſs than that of a near one; therefore in a *concave* one, the image of an object plac'd between the *focus* and the *mirrour* is nearer the *focus* than the *ſpeculum*.

4. The image therefore of an object receding continually from a *concave ſpeculum* becomes continually greater, provided it don't recede beyond the *focus*, where it becomes confus'd, and as it approaches, it grows continually leſs.

6. If an object be placed between a *concave mirrour* and its *focus*, its image will appear behind the *mirrour*, in an erected but inverted ſituation.

The Phænomena of CONVEX MIRROURS.

1. In a ſpherical *convex mirrour* the image is leſs than the object.

And hence ſuch *mirrours* are of uſe in the art of *painting*, where objects are to be repreſented leſs than the life.

2. In a *convex mirrour*, the more remote the object is, the leſs the image is; and again the ſmaller the *mirrour*, the leſs the image.

3. In a *convex mirrour*, the right is turn'd to the left, and the left to the right; and magnitudes perpendicularly to the *mirrour* are turned topſy-turvy.

4. The image of a right line perpendicular to the *mirrour* is a right line; but that of a right line, either oblique to the *mirrour*, or parallel to it, is *convex*.

5. Rays reflected from a *convex mirrour* diverge more than if reflected from a *plane mirrour*.

6. Rays reflected from a *convex mirrour*, of a ſmaller ſphere, diverge more than if reflected from a larger.

To poliſh the Steel MIRROURS.

Whatſoever exactneſs you uſe in moulding theſe, they do never receive their true ſhape and perfection, until they are poliſhed and burniſhed; in doing which, leſt you ſhould ſpoil or endamage them, you muſt work away the outſide at the wheel with the ſand-ſtone, which the pewterers and braſiers uſe, and then apply the handle, and poliſh them ſufficiently, by rubbing with water.

When this is done, take it off this wheel, and put it on the ſecond, and rub it with *emery* prepar'd, that it may be finely poliſh'd, ſo that the ſcars may be ſcarce perceptible. Do this in an oblique line.

Then take it off this, and ſet it on ſuch another, and rub it with *blood-ſtone* prepar'd, and afterwards uſe *calx of tin*, working it for a long time until it have its due burniſh and perfection, ſtill doing it in the ſame obliquity.

Theſe *mirrours* may be alſo poliſh'd with lead artificially melted, with *emery* and water for the firſt proceſs; and very fine *emery* and lead for the ſecond, and in the laſt with *blood-ſtone* and *tin-droſs*: theſe make a finer burniſh than the former; for the *mirrour* is highly poliſhed by the *tin-droſs*.

Others direct for the poliſhing of the MIRROUR;

After the *mirrour* has been caſt off ſome of the compoſitions and moulds before-directed, and taken out of them, let it be cemented to a wooden frame, and thus work'd to and fro over the convex ſtone mould; firſt with water and ſand, and laſtly without ſand, 'till it be fit for poliſhing, which do as follows;

Cover the ſtone mould over with paper, and ſmear that over with *Tripoli* duſt and *calx of tin*, and work the *mirrour* over it to and fro, 'till it has gotten a perfect poliſh.

In the ſame manner may glaſs *mirrours* be poliſh'd, excepting that in them the convex ſurface is wrought in the concave mould.

For concave *mirrours* of glaſs, the mould may be made of *alabaſter*, the reſt as in metal *mirrours*. When the *mirrours* are very large, they are fix'd on a table, and firſt ground with a gritty ſtone, and then with *pumice*, and then with fine ſand by means of a glaſs cemented to a wooden frame; and in the laſt operation wrought with *calx of tin*, and *Tripoli* duſt, by a wet leather.

Theſe *mirrours* muſt be kept from the moiſtneſs of the air, and ſteams; or if they ſhould happen to be injured by them, they may be reſtor'd by rubbing on them a piece of deer or goat's skin, humouring the oblique line; no woollen or linnen ſtuff muſt be us'd about theſe *mirrours*, for they ſpoil them.

Archimedes is ſtoried to have made a very happy uſe of *burning mirrours* in the defence of his country, when he burnt the fleet of *Marcellus* before *Syracuſe*, by placing his *burning glaſs* on the higheſt turret in the city, whence proceeded ſuch a mighty conflagration, as deſtroy'd that vaſt *Flota*, in ſpite of *Neptune* and the waters.

Alſo *Proclus*, that brave and famous mathematician, burnt the fleet of *Vitellian*, who came to beſiege *Conſtantinople*, which he preſerv'd by his induſtry.

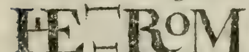
Many other fine and admirable relations might be given of the effects of *burning mirrours*, too numerous to be here mentioned.

MIRTH is repreſented [in *Painting*, &c.] by a youth with jolly plump cheeks, clothed in white raiment, painted with green branches; flowers red and yellow, with a garland of ſeveral flowers, holding a cryſtal glaſs full of claret in one hand, and in the other a golden cup, and in a dancing poſture in a flowery meadow.

Flowers do naturally import a jovial humour, and we ſay the fields ſmile, when covered with flowers. The glaſs and golden cup intimate, that *mirth* is rarely alone, but in *good fellowſhip*.

M. L. ſignifies *Melchior Lorichius*.

M. *Merian* ſignifies *Matthew Merian*.



HIERONIMUS MOCETUS, he publiſhed the reſurrection of our Saviour, and ſeveral battles, and us'd this mark.

PELLEGRINO *da* MODENA, ſcholar of *Raphael*, liv'd at *Rome* and *Modena*, excell'd in hiſtory-painting.

MODESTY is repreſented [in *Painting*, &c. by a young girl, holding a ſceptre in her right hand, having an eye on the top, clothed all in white, girded with a golden girdle, with her head inclin'd to the left, and in a plain head-dreſs.

Her plain head-dreſs intimates, that ſhe is *content* with a *little*, obſerving a due *decorum*; the girdle denotes the ſubduing of the unruly paſſions; her down and ſedate look ſhew her *modeſty*, the ſceptre and eye ſignify that ſhe has an eye to *danger*, and regards the ſubduing of her *paſſions*, to make them ſubmit to reaſon.

PIER FRANCESCO MOLA, born in 1609, a ſcholar of *Albani*, liv'd in *Rome*, excell'd in hiſtory, died in the year 1665, aged 56 years.

Sir ANTHONY MORE *of* Utrecht, born in the year 1519, ſcholar of *Schoorel*, liv'd in *Italy*, *Spain*, *Flanders*, *England*, excell'd in hiſtory and portraits, died in the year 1575, aged 56 years.

MORISCO } Is a kind of painting, carving, *&c.* done after
MORISK } the manner of the *Moors*; conſiſting of ſeveral groteſque pieces and compartments, promiſcuouſly mingled, not containing any perfect figure of a Man, or other animal; but a wild reſemblance of birds, beaſts, trees, *&c.*

MOSAIC } Is an aſſemblage of little pieces of glaſs,
MOSAIC WORK } marble, precious ſtones, *&c.* of various colours, cut ſquare and cemented on a ground of *Stuc*, &c. imitating the natural colour and degradation of *painting*.

In performing this Work, they provide little pieces of glaſs, of as many different colours as they poſſibly can.

For this purpoſe a glaſs-maker's furnace being prepar'd, and the pots or crucibles, full of the matter of which glaſs is made; they put into each crucible what colour or dye they think fit, always beginning with the weakeſt, and augmenting the ſtrength of the colour from crucible to crucible, 'till they come to the deepeſt tincture.

When the glaſs has been thoroughly concocted, and the colours are in their perfection, they take out the glaſs hot as it is, and pour it on a ſmooth marble, flatting it down with another like marble, and then cut it into ſlices of equal bigneſs, and about the thickneſs of an inch and half.

Then with an inſtrument, which the *Italians* call *Bocca di Cane*, they make ſome pieces ſquare, and others of different forms and ſizes, as occaſion requires: Theſe pieces are orderly diſpos'd in caſes, as in painting *in freſco*; it is uſual to range all the different teints in ſhells, and according to their colour.

If it be deſired to have gold, either in the ground of the painting, or in the ornaments or draperies, they take ſome of the pieces of glaſs, form'd and cut in the manner before-mentioned. Theſe they moiſten on one ſide with gum-water, and afterwards lay them over with leaf-gold; then they put this piece, or ſeveral pieces at a time, on a fire-ſhovel, and place it in the mouth of the furnace, after they have firſt covered them with another hollow piece of glaſs. Theſe are let to ſtand 'till they are juſt red-hot, then the ſhovel is drawn out all at once, and the gold becomes ſo firmly attach'd to the glaſs, that it will never afterwards come off.

Now in order to apply theſe ſeveral pieces, and out of them to form a picture, they in the firſt place procure a cartoon or deſign to be drawn; this is transferr'd to the ground or plaiſter by calking, as in painting *in freſco*. *See* FRESCO.

As this plaiſter is to be laid thick on the wall, and therefore will continue freſh and ſoft a conſiderable time, ſo that there may be enough prepar'd at once, to ſerve for as much work as will take up 3 or 4 days.

This plaiſter is compos'd of *lime*, made of *hard ſtone*, with *brick-duſt* very fine, *gum Tragacanth*, and *whites of eggs*; when this plaiſter has been thus prepar'd and laid on the wall, and made the deſign of what is to be repreſented; they take out the little pieces of glaſs with a pair of plyers, and range them one after another, ſtill keeping ſtrictly to the light ſhadow, different teints and colours repreſented in the deſign before; preſſing or flatting them down with a ruler, which ſerves both to ſink them within the ground, and to render the ſurface even.

Thus in a long time, and a tedious deal of labour, they finiſh the work, which is ſtill the more beautiful, as the pieces of glaſs are more uniform, and rang'd at an even height.

Some of theſe pieces of *Moſaic Work* are perform'd with that exactneſs, that they appear as ſmooth as a table of marble, and as finiſh'd and maſterly as a painting in *freſco*; with this advantage, that they have a fine luſtre, and will laſt ages.

The fineſt works of this kind, that have remain'd 'till our time, and thoſe by whom the moderns have retriev'd the art, which was in a manner loſt, are thoſe in the church of *St. Agnes*, formerly the temple of *Bacchus* at *Rome*; at *Piſa*, *Florence*, and other cities of *Italy*.

The moſt eſteem'd among the works of the moderns are thoſe of *Joſeph Pine*, and the chevalier *Lanfranc* in the church of *St. Peter* at *Rome*: There are alſo very good ones at *Venice*.

MOSAIC WORK *of marble and precious ſtones.*

Theſe two kinds of *Moſaic* bear ſo near a reſemblance to each other, as to the manner of working, that to avoid repetition, we ſhall give them both under one; taking notice by the way, wherein the one differs from the other, either in the ſawing, or the ranging of the ſtones.

Moſaic Work of marble is us'd in large works, as in pavements of churches, *baſilics*, and palaces; and in the incruſtation and vaneering of the walls of the ſame edifices.

As for that of *precious ſtones*, it is only us'd in ſmall works, as ornaments for altar-pieces, tables for rich-cabinets, precious ſtones being ſo very dear.

Tho' out of theſe muſt be excepted that ſumptuous chapel of the Dukes of *Tuſcany*, which has been ſo long in hand, and which, if ever it be finiſh'd, will be a noble monument of the magnificence of thoſe princes, and alſo of the patience and addreſs of the workmen employ'd therein.

The ground of MOSAIC Works, wholly marble, is uſually a maſſive marble, either white or black.

On this ground the deſign is cut with a chiſſel, after it has been firſt calqued.

After it has been cut of a conſiderable depth, *i. e.* an inch or more, the cavities are filled up with marble of a proper colour, firſt faſhioned according to the deſign, and reduc'd to the thickneſs of the indentures with various inſtruments.

To make the pieces thus inſerted into the indentures cleave faſt, whoſe ſeveral colours are to imitate thoſe of the deſign, they uſe a *Stuc*, compoſed of lime and marble-duſt; or a kind of *maſtic*, which is prepar'd by each workman, after a different manner peculiar to himſelf.

The figures being mark'd out, the painter or ſculptor himſelf draws with a pencil the colours of the figures, not determined by the ground, and in the ſame manner makes ſtrokes or hatchings in the place, where ſhadows are to be; and after he has engraven with the chiſſel all the ſtrokes thus drawn, he fills them up with a black *maſtic*, compos'd partly of *Burgundy* pitch poured on hot; taking off afterwards what is ſuperfluous, with a piece of ſoft ſtone or brick, which, together with water and beaten cement, takes away the *maſtic*, poliſhes the marble, and renders the whole ſo even, that one would imagine it only conſiſted of one piece.

This is the kind of *Moſaic* work, that is ſeen in the pompous church of the Invalids in *Paris*, and the fine chapel at *Verſailles*, with which ſome intire apartments of that palace are incruſtated.

As for *Moſaic* work of precious ſtones, other and finer inſtruments are requir'd than thoſe us'd in marble; as drills, wheels, *&c.* us'd by lapidaries and engravers on ſtone.

As none but the richeſt marbles and ſtones enter this work, to make them go the further, they are ſawn into the thinneſt leaves imaginable, ſcarce exceeding half a line in thickneſs; the block to be ſawn is faſtened firmly with cords on the bench, and only rais'd a little on a piece of wood, one or two inches high.

Two iron pins, which are on one ſide the block, and which ſerve to faſten it, are put into a vice contrived for the purpoſe, and with a kind of ſaw or bow, made of fine braſs wire, bent on a piece of ſpungy wood, together with emery ſteep'd in water, the leaf is gradually faſhioned by following the ſtroke of the deſign, made on paper, and glued on the piece.

When there are pieces enough faſtened to form an intire flower, or ſome other part of the deſign, they are apply'd to the ground.

The ground which ſupports this *Moſaic* work is uſually of free-ſtone.

The matter, with which the ſtones are join'd together, is a *maſtic*, or kind of *ſtuc*, laid very thin on the leaves, as they are faſhioned; and this being done, the leaves are apply'd with plyers.

If any contour, or ſide of a leaf, be not either ſquar'd or rounded ſufficiently, ſo as to fit the place exactly, into which it is to be inſerted, when 'tis too large, it is to be brought down with a braſs file or raſp; and if it be too little, it is manag'd with a drill and other inſtruments us'd by lapidaries.

The manner of performing MOSAIC *Work of* GYPSUM.

Gypſum is a kind of coarſe *Talc*, or a ſhining tranſparent ſtone, found in the quarries of *Mont-Martre* near *Paris:* it is different from the *plaiſter of Paris*, but retains the name which the *Romans* gave to the plaiſter, *viz. Gypſum.*

Of this *Gypſum*, or ſtone calcin'd in a kiln, and beaten in a mortar, and ſifted, the *French* workmen make a ſort of artificial marbles, imitating precious ſtones, and of theſe they compoſe a kind of *Moſaic* work, which does not come far ſhort, either of the durableneſs or the vivacity of the natural ſtones; and which beſides has this advantage, that it admits of continued pieces or paintings of intire compartiments without any viſible joining.

Some make the ground of *plaiſter of Paris*, others of free-ſtone. If it be of *plaiſter of Paris*, they ſpread it in a wooden frame, of the length and breadth of the work intended, and in thickneſs about an inch and a half.

This frame is ſo contriv'd, that the tenons being only join'd to the mortiſſes by ſingle pins, they may be taken aſunder, and the frame be diſmounted, when the plaiſter is dry.

The frame is covered on one ſide with a ſtrong linnen cloth, nail'd all round, which being plac'd horizontally with the linnen at the bottom, is fill'd with plaiſter paſs'd through a wide ſieve.

When the plaiſter is half dry, the frame is ſet up perpendicularly, and left 'till it is quite dry; then it is taken out, by taking the frame to pieces.

In this *Moſaic* the ground is the moſt important part.

Now in order to the preparation of this ſifted *Gypſum*, which is to be apply'd on this ground, it is diſſolv'd and boil'd in the beſt *Engliſh* glue, and mixt with the colour that it is to be of, then the whole is work'd up together in the uſual conſiſtence of plaiſter; and then is taken and ſpread on the ground 5 or 6 inches thick.

This muſt be obſerv'd, that if the work be ſuch, as that mouldings are requir'd, they are form'd with gouges and other inſtruments.

It is on this plaiſter thus coloured like marble or precious ſtone, and which is to ſerve as a ground to a work, either of *lapis*, *agate*, alabaſter, or the like, that the deſign to be repreſented is drawn; having been firſt pounc'd or calqued.

To hollow or impreſs the deſign, they uſe the ſame inſtruments that ſculptors do; the ground whereon they are to work, not being much leſs hard than the marble itſelf.

The cavities being thus made in the ground, are fill'd up with the ſame *gypſum* boil'd in glue, only differently colour'd, and thus are the different colours of the original repreſented.

In order that the neceſſary colours and teints may be ready at hand, the quantities of the *gypſum* are tempered with the ſeveral colours in pots.

After the deſign has been thus fill'd and rendred viſible, by half poliſhing it with brick and ſoft ſtone, they go over it again, cutting ſuch plates as are either to be weaker, or more ſhadowed, and filling them with *gypſum*; which work they repeat, 'till all the colours being added one after the other, repreſent the original to the life.

When the work is finiſhed, they ſcour it with ſoft ſtone, ſand, and water; after that, with a pumice ſtone; and in the laſt place poliſh'd with a wooden mullet and emery.

Then *laſtly*, they give it a luſtre, by ſmearing it over with oil, and rubbing it a long time with the palm of the hand, which gives it a luſtre, no ways inferior to that of natural marble.

If you would only make a variegated table, or other work, of ſeveral colours, without *Moſaic* figures, the proceſs is ſomewhat different.

Then you are to prepare colours ſeparately in bowls, as many as nature ſhews in the marble to be imitated; and after you have incorporated them with *gypſum* and glue-water, take a trowel full of each, and diſpoſe them in a trough, without any order, then without mingling them, and only by cutting or croſſing the *gypſum* of each trowel, once with each of the reſt, they give them that beautiful confuſion, which renders natural marble valuable. Of theſe you may make tables, or lay them in a mould according to the work to be done.

To MOULD *off* FIGURES *in* PASTE.

Take the crumb of a new-drawn white loaf, mould it 'till it becomes as cloſe as wax, and very pliable; then beat it and roll it with a rolling-pin, as fine and as far as it will go; then print it on the moulds, and when it has taken the ſuitable figure you deſire, dry it in a ſtove, and it will be very hard; and to preſerve

ſerve it from vermine, you may mix a little powder of aloe with it.

To MOULD *ſmall figures of jaſper colour.*

Oil your moulds with a fine pencil, and diverſify them with ſuch colours as you pleaſe with *gum tragacanth*; if they ſpread or run, put a little of the gall of an ox, for the thicker it is the harder it will be; then mould your paſte of the colour of *jaſper*, or the like, put it in to fill the mould, tie it with a wire, and take it out; repair and varniſh it, and ſet it to harden.

The manner of preparing or making CONCAVE MOULDS.

To make a *mould* to caſt them in,

Take clay, dry it well, reduce it to powder, and ſift it; mix it up with water, then ſtrain and filtre it; then work it up with horſe-dung and hair ſhred ſmall, till the maſs is ſufficiently tough; to which (if you pleaſe) may be added charcoal-duſt or brick-duſt well ſifted; then prepare two coarſe moulds of a gritty ſtone, the one concave, and the other convex, grind them one on another with wet ſand between, till ſuch time as the one perfectly fits the other. By this means, a perfect ſpherical figure is acquired.

This being done, extend the maſs prepared before on a table, by means of a wooden roller, till it be of a thickneſs proper for the *mirrour*; then ſtrew it with brick-duſt, to prevent its ſticking, and lay it over the convex mould, and ſo you will obtain the form of the *mirrour*.

When this is dry, cover it with another lay of the ſame maſs; and when it is dry, take off each cover or ſegment of the hollow ſphere made of clay, and lay aſide the innermoſt of the two, and anoint the ſtone mould with greaſe prepared from chalk and milk, and put the outward cover over it again.

Laſtly, cover the joining with the ſame clay of which the cover is formed, and bind the whole mould together with iron wire, having cut two holes through the cover, the one for pouring in the melted matter of the *mirrour*, and the other for the air to eſcape out at, to prevent the *mirrour* from being ſpoiled with bubbles.

MOUTH [*to paint in miniature.*] Do it with *vermilion* mixed with *white*, and finiſh with *carmine*, which is to be ſoftened like the other parts of the face, *&c.* and if the *carmine* does not prove dark enough for the purpoſe, mix *biſtre* with it: this is to be underſtood of the corners between the lips, and particularly for ſome dark open mouths.

M. R. Signifies *Mark Ravennate*, or *Ravignano*, i. e. *Mark* of *Ravenna*, ſcholar to *Mark Anthony Raimondi.*

M ✝ S Signifies *Martin de Secu*, or *Schonio*, called by ſome *Bonmartine*, and *Albert Durer*'s maſter.

MUSES, they are reckoned nine in number, *viz. Calliope, Clio, Erato, Thalia, Euterpe, Melpomene, Terpſichore, Polyhymnia*, and *Urania*.

They are called Muſes (as *Euſebius* writes) of ϖαρά τȣ̃ μυεῖν *i.e.* to inſtruct, becauſe they teach the moſt honeſt and laudable diſciplines.

Calliope, [of Καλὸς good, and Ὄψ voice,] is repreſented in painting as a beautiful goddeſs, crowned with a coronet of gold; upon her left hand, garlands of bays in ſtore for the reward of poets; and in her right hand three books, upon which are written *Homerus*, *Virgilius*, *Ovidius*.

Clio, her name is taken from praiſe and glory, [of Κλείω, gr. to celebrate] one of the nine *muſes*, taken for heroic poetry, is repreſented as a graceful matron, crowned with a coronet of bays, holding in her right hand a trumpet, and in her left a Book, upon which may be written *Hiſtoria*.

Erato, is ſo called from Ερως love, or Ερᾷω. gr. to love] one of the nine *muſes*, fabled to be the preſident of lovers and amorous perſons; ſhe is repreſented as a woman of a ſweet and comely viſage, her temples adorned with myrtles and roſes, bearing an heart with an ivory key, *Cupid* ſtanding by her ſide winged, his bow and quiver at his back, and holding a lighted torch.

Thalia, [of τȣ̃ θάλλειν, gr. to be green, or flouriſh] one of the nine *muſes*, ſuppoſed to be the inventreſs of geometry and husbandry, is repreſented as a lady of a ſmiling countenance, and upon her temples a coronet of ivy, clad in a mantle of carnation, embroidered with ſilver twiſt, and golden ſpangles, holding in her left hand a viſard; the ivy indicates, that ſhe is miſtreſs of comical poetry.

Euterpe, [is ſo called of ἒυ well, and τέρπειν to give delight,] ſuppoſed to be the inventreſs and preſident of the mathematical ſciences, *&c.* is repreſented as a damſel of a chearful countenance, crowned with a garland of flowers, holding in each hand ſundry wind inſtruments.

Melpomene, [of μέλπομαι, gr. to ſing,] one of the nine *muſes*, to whom the poets aſcribe the invention of tragedy, is repreſented like a virago, with a grave and majeſtick countenance, her head adorned with pearls, diamonds, and rubies; holding in her left hand ſceptres with crowns upon them; other crowns and ſceptres lying at her feet, holding in her right hand a naked poinard, clad in a mantle of changeable crimſon. Her gravity befits tragick poetry.

Terpſichore, [of τέρψις delectation, and χρεία, gr. a dance] one of the nine *muſes*, to whom is attributed the invention of dancing and balls, is repreſented as a beautiful woman of a chearful countenance, playing upon ſome inſtrument, having upon her head a coronet of feathers of various colours; but chiefly green; in token of the victory which the *Muſes* obtained over the *Syrens*, &c. by ſinging.

Polyhymnia [of πολὺς and ὕμνος a hymn] one of the nine *muſes*, ſuppoſed to be the preſident of hymns, ſongs, and muſick; her name denotes *memory*, to which rhetoricians are beholden; is repreſented as a beautiful woman cloathed in white, her hair diſhevelled, of an orient yellow, upon her head a garland of the choiceſt jewels, intermixed with flowers, and in her left hand a book, upon which may be written *ſuadere*.

Urania, [of οὐρανος, gr. heaven] one of the nine *muſes*, to whom is attributed the invention of aſtronomy, is repreſented as a beautiful lady, cloathed in a robe of azure, crowned with a coronet of bright ſtars, holding in her right hand a celeſtial globe, and in her left a terreſtrial one; her name denotes heavenly.

To dye ſtuff a MUSK *colour.*

For every pound of wool allow two ounces of *alum*, two ounces of *copperas*, and two ounces of *tartar*, two ounces of *brown wood*, and two ounces of *madder*, to finiſh it.

Take again of *brown wood*, *madder*, and *copperas*, of each two ounces.

Another for a piece of raſh.

Take one pound of *yellow wood*, one pound of *vitriol*, and half a pound of *galls*, and ſtir the ſtuff in it as uſual.

GIROLAMO MUTIANO *da* BRESCIA, born in the year 1528, ſcholar of *Romanini*, ſtudied *Titian* and *Tad Zucchero*, lived at *Rome*, excelled in hiſtory and landſcape, died in the year 1590, aged 62 years.

Daniel MYTENS was a *Dutch* portrait-painter in the time of King *James* and King *Charles* I. he painted the pictures of thoſe two Kings.

Some of his pictures have been taken for *Van Dyck*'s, whoſe manner he imitated. His head is alſo to be ſeen among thoſe of that great maſter, who painted his picture.

He had a penſion from King *Charles* I. being his majeſty's principal painter; and upon *Van Dyck*'s arrival in *England*, tho' he loſt his place, yet his penſion was continued to his death.

M. Z. ſignifies *Martin Zinkius*, i. e. Zaringeri, 1500.

N.

NADAT has marked his plates with a mole or a want-trap.

NAIADES [ſo called of νέω, gr. to flow] are the nymphs of the floods, and are repreſented as beautiful damſels, with hair tranſparent as cryſtal, their arms and legs naked, crowned with garlands of water creſſes, with red leaves; their actions are pouring water out of urns, *&c.*

NAPEÆA, are nymphs of the mountains [ſo called of Ναπὸς, the top of an hill, or woody valley,] they are repreſented as damſels with a ſweet and gracious aſpect, clad in green mantles, girded about the waiſt, their heads adorned with garlands of honey-ſuckles, wild roſes, thyme, and the like, either dancing in a ring, making garlands, or gathering flowers.

To *paint* the NARCISSUS; for all theſe flowers of the yellow ſort, ſingle or double, firſt lay on *maſticot*, then *gamboge*, and finiſh it by adding a little *umber* and *biſtre*; but the cup or bell in the middle are to be excepted, which are to be done with *orpiment* and *gall-ſtone*, and edged with *vermilion* and *carmine.*

As for the white *Narciſſus*, cover them with white, and ſhade with black and white; except the cup or bell, which do with *maſticot* and *gamboge.*

Let the green be *ſea-green*, ſhaded with *iris.*

N. B. ſtands for *Nicholas de Bruyn.*

N. B. L. F. ſtands for *Nicholas Beatrici Lotharingius fecit.*

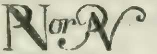
N. C. F. ſtands for *Nicholas Chapron, a Frenchman, fecit.* anno 1649 he engraved *Raphael's* galleries, painted in the *Vatican.*

NEALING is a term uſed for the preparing ſeveral matters, by heating or baking them in an oven, or the like. *See* ANNEALING.

Nealing of Glaſs is the baking of glaſs, to dry, harden, and give it the due conſiſtence, after it has been blown and faſhioned into proper works.

This is uſually performed in a kind of tower called a *leer*, built over the melting-furnace in a glaſs-houſe.

Nealing of ſteel is the heating it in the fire to a blood-red heat; and then taking it out, and letting it cool gently of itſelf.



PETER VAN NELPE, an engraver of all ſubjects uſed this mark.

NEMESIS, according to *Pauſanias* and *Ammianus Marcellinus*, was held to be the goddeſs of puniſhments, who chaſtiſes the offences and crimes of malefactors with pains and torments, according to their demerits and ſins; and rewards the virtuous with honours and dignities: ſhe is ſaid to be the daughter of *Juſtitia*, (who dwells and inhabits very ſecretly within the houſe of eternity, recording the offences of the wicked) and a moſt ſevere and cruel puniſher of arrogancy and vain-glory.

Macrobius relates, that *Nemeſis* was adored among the *Ægyptians* (under the name of *Rhamnuſia*) as the revenger and chief enemy of pride, inſolence, and haughtineſs; and that ſhe had a moſt ſtately and magnificent ſtatue of marble erected, and dedicated to her.

He deſcribes her with wings on her ſhoulders, and the rudder of a ſhip hard by her ſide; ſhe herſelf ſtanding upright upon a round wheel, holding in her right hand a golden ball, and in her left a whip. She is alſo often painted holding the bridle of an horſe in one hand, and a ſtaff in the other.

Aulus Gellius tells us, that *Chryſippus* deſcribes her like a young virgin of a beautiful and modeſt countenance, with her eyes prying round about her; upon which account the ancients called her the *all-diſcerning lady*.

NEPTUNE was depicted by the ancients naked, with ſeveral countenances, ſometimes mild and pleaſant, at other times lowring and ſad, and at other times with a mad and furious aſpect; ſtanding upright in the hollowneſs of a great ſea-ſhell, holding in his hand a ſilver trident or forked mace; drawn by two monſtrous horſes, which from the middle downwards have the ſhape of fiſhes.

The variety of aſpects is given him from the ſea, becauſe that at certain times ſheweth itſelf ſo, and the trident repreſents the three gulphs of the *Mediterranean* ſea.

Sometimes he is repreſented with a thin vail, hanging over one of his ſhoulders, of a *cerulean* or blueiſh colour.

Lucian deſcribes him with very long hair, hanging over his ſhoulders, of a very dark colour.

Martianus deſcribes him of a greeniſh complection, wearing a white crown: alluding thereby to the ſpume and froth of the ſea.

He is alſo painted with long hoary hair, clad in a mantle of blue, or ſea-green, trimmed with ſilver, riding in a chariot of a blue colour, or on a dolphin of a brown black colour, holding in his hand a ſilver trident.

Plato deſcribes him in a ſumptuous chariot, drawn by ſea-horſes galloping, holding in one hand the reins of a bridle, in the other a whip.

Servius *and others affirm, that all the gods of the ſea were for the moſt part drawn in the ſhape of old men, with white and hoary hairs, proceeding from the froth or ſpume of the ſea.*

NIGHT (the mother of *ſleep* and *death*) is repreſented by the ancients in the form of an old woman, of a ſad countenance, having two large wings on her ſhoulders, coal black and ſpread abroad, as if ſhe ſeemed to offer at a flight, and drawn in a chariot with wheels of *ebony*, and clothed in an upper garment of a deep black, ſpotted all over with ſilver ſpots, like ſtars.

NITRE is a ſort of ſalt, thus called by the *ancients*; but by the *moderns* more uſually ſalt-petre.

Some authors ſay, that *nitre* was ſo called of *Nitria*, a Province of *Ægypt*, where it was found in great abundance; they add too, that their *nitre* was of divers colours, *viz. white*, *red*, and *livid*; that ſome of it was cavernous like a ſpunge; others cloſe and compact, others tranſparent like glaſs, and others ſcaly.

Naturaliſts are not agreed whether our *ſalt-petre* be the *nitre* of the ancients.

Moſt authors are of opinion that the ancient *nitre* was a mineral or foſſil; whereas our *ſalt-petre* is artificial. *Serapion* ſays, that their mines of *nitre* were like thoſe of common ſalt, and that it was formed out of running water, congealed in its progreſs into a ſort of ſtone; and that their *nitre* was of four kinds, diſtinguiſhed by the names of the countreys from whence it came, *viz. Armenian*, *Roman*, *African*, called *Aphronitron*, and the *Egyptian*.

N. M. D. ſignifies *Nicholas Manuel* de *Berna*, 1518.

NOVEMBER is deſcribed [in *Painting*, &c.] in a robe of changeable green and black; wearing on his head a garland of olives, together with the fruit on, holding in his right hand *Sagittarius*, and in his left bunches of parſnips and turnips.

NUDITIES [*in painting and ſculpture*] are thoſe parts of a human figure which are not covered with any drapery: or thoſe parts where the carnation appears.

To die cloth or ſtuff a NUTMEG *colour.*

Boil three pound of *alum* and half a pound of *tartar* for two hours, then take out the ſtuff and let it cool, and then add one pound and a half of *viſel-wood*, or yellow flowers, three pounds of madder, and one pound of *galls*; put them all together into the kettle, and boil them for an hour and a half, and wind the ſtuff very cloſe upon the roller; and if it be red enough, take it out and cool it; then put in two pounds of *copperas*, and if you can diſſolve it with warm water, you may add a little more, then put in the cloth, letting it continue till it is enough, then rinſe it out as uſual.

Another of the ſame.

Put two or three quarts of walnut-ſhells, or walnut-roots into a copper, make it boil, and then put in the ſtuffs and rollers; and after a convenient time take them out and cool them, and make the ingredients boil again; then put in the cloth again, and let it boil for half an hour; then take it out and cool it, and add to the liquor three pounds of *madder*, and one pound of *galls*, putting them in together with the ſtuffs, let them boil for an hour, then take out the cloth and cool it; then put into the kettle two pounds of *copperas*, ſtir it well about, and put the cloth into the copper again, look well after the fire, and keep ſtirring the ſtuff about, till the colour is deep enough, then rinſe it out, *&c.*

A Nutmeg *or cinnamon colour.*

Boil the ſtuff, with two pound of *alum*, and half a pound of *tartar*, and ſome ſharp lye, for an hour; then pour off the water and put freſh into the kettle, and make the *flota* of three pounds of *madder*, a ſufficient quantity of tartar-aſhes, three pound of of alder-bark; boil them together, and dye the cloth for an hour.

Some dye it pale; but if you would have it deeper, add two or three pounds of *copperas*, and the cloth will be of a very good *nutmeg* colour.

Another.

Firſt boil *alum* and tartar, as for the *red-dye*, then half *madder* it, and add to the madder a quarter of a pound of galls to every fifteen yards of ſtuffs.

You muſt take care it be not at moſt above half dyed red; and after that paſs it through the *copperas* till it is dark enough, then rinſe it, and after that paſs it through the *yellow* dye, and it will be of a beautiful nutmeg colour.

MARIO NUZZI *di* FIORI, born in the year 1599, ſcholar to his uncle *Tomaſo Salmi*, lived at *Rome*, excelled in flowers, died in the year 72, aged 73 years.

NYMPHS [are ſo called of *νυμφη*, gr. a bride] and is nothing elſe but an allegory taken from the vegetative humidity which gives life to trees, herbs, plants and flowers, by which they grow and increaſe.

They are feigned to be the daughters of *Oceanus*, i. e. the Ocean, the mother of the floods, the nurſes of *Bacchus*, and Goddeſſes of the fields, who have the protection and charge of the mountains, herbs, woods, meadows, rivers, trees, and generally of the whole life of man.

NYMPHÆ DIANÆ, *Diana's nymphs*, are repreſented clothed in white linnen, to denote their virginity, and their garments girt about them ſo as to expreſs their hability and readineſs for hunting; their arms and ſhoulders naked, holding in their hands bows, and quivers on their backs.

O.

OAR
ORE } is the mineral glebe, or earth dug out of mines to be purified, and the metalline parts procured, and ſeparated from the ſame.

The Ore is frequently called the *mineral*, and among the ancients *marcaſite*; though the moderns affix another idea to that name.

OBEDIENCE is repreſented in painting, *&c.* by a pious, modeſt virgin, ſubmitting to a yoke, with the inſcription SUAVE n it.

The yoke and croſs import the difficulties that accompany his virtue, as SUAVE does the pleaſures reſulting from the ractice when it is ſpontaneous.

OBLIGATION is repreſented in painting, *&c.* by an armed man with two heads and four hands, to demonſtrate that a man obliged acts two parts, *viz.* to take care of himſelf, and o ſatisfy another; the hands and heads ſignify the dividing the houghts and operations.

OBSCURA CAMERA, ſee CAMERA.

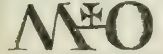
OBSCURA CLARO, ſee CLARA.

OBSTINACY is repreſented in painting, *&c.* as a woman clad ll in black, her head ſurrounded with a cloud, holding an aſs's head with both her hands.

Black denotes obſtinacy, becauſe it will take no other colour, o an opinionative man will never be beat out of his error; he clouds denote the ſhort-ſight of the obſtinate, that makes hem ſo ſtiff that they will look no farther; the aſs ſhews that groſs gnorance is the mother of it.

OCEANUS, the father of all the ſea-gods, was repreſented with the face of an old man, and a long white beard, drawn on a glorious chariot, accompanied and attended with a great company of nymphs.

OCTOBER is repreſented in painting in a garment of the colour of decaying flowers and leaves, and upon his head a gar-and of oak-leaves with the acorns; holding in his right hand a ſcorpion, in his left a basket of ſervices, medlars, and cheſnuts.



MAURO ODDI, an engraver and painter of *Parma*, uſed this mark.

OECONOMY is repreſented in painting and ſculpture, by a venerable dame, crowned with olive, a pair of compaſſes in her left hand, and a ſmall wand in her right, and a rudder of a ſhip by her ſide.

The ſtick denotes the rule a man has over his houſe, the rudder the care a father ought to have over his children, the olive garland the pains he ought to take in maintaining peace in his family, the compaſſes prudence and moderation.

OFFENCE is repreſented in painting, *&c.* by a brutiſh woman, her clothes ruſt coloured, with tongues, preſenting a piece at two dogs going to worry a hedgehog.

The ruſt ſhews offence, the tongues that ſhe offends in words and deeds, the dogs and hedgehog, that thoſe that do hurt to others are hurt themſelves.

As to OILS, the beſt that can be us'd in painting are *oil of nuts* and *linſeed-oil.*

Oil of ſpike, which is made of lavender-flowers, ſerves to make the colours run better, and renders the touching the picture over again the more eaſy; it alſo takes off the glittering of a picture, and is proper to do the ſame by the *filth, and clean* it: but the painter muſt have a care it does not take off the colour too.

Oil of Turpentine, which is drawn from *roſin*, is good to touch a picture over again with; but eſpecially to mix with *ultramarine* and *enamels;* becauſe it helps to ſpread them, and evaporates immediately. When the artiſt would make uſe of it, 'tis not neceſſary, he ſhould make uſe much of other oil, which will only turn the colour yellow.

Oil of nuts, is us'd by painters boil'd up with the ſcum of *lead*, in which ſilver has been melted by a quick and great fire. To this is added an onion whole and peeled, which is taken out after it has boil'd. This takes away from the oil its greaſy quality.

Oil of nuts, is alſo boil'd with powder of *azure* and *enamel*, which being boil'd, is let to ſtand a little, and then the top taken off. This is us'd to temper *white* and the other *colours*, which the painters would have be kept clean.

FAT OIL; put linſeed-oil into leaden-veſſels, made in the form of dripping-pans, ſo much as to be an inch deep: expoſe them to the ſun for ſix months, till it becomes as thick as *turpentine:* the longer it ſtands, the fatter it will be, and give to gold a greater gloſs. If it is almoſt as thick as butter, ſo as you may in a manner cut it with a knife, it is excellent, and ought to be carefully kept for uſe.

To make DRYING OIL.

Mix a quart of *linſeed-oil*, with three ounces of litharge of gold, and boil them for a quarter of an hour; but if you would have it more drying, boil it a little longer. But beware of boiling it to thick, ſo as not to be fit for uſe.

2. *Or thus.* Take red-lead and umber in fine powder, half an ounce, *linſeed-oil* two pound, boil all as before; let it ſtand for two days, and it will have a skin over it, then it is fit for uſe.

Oil of Turpentine

Is us'd to diſſolve the colours and make them ſpread the better, and to make the work dry the ſooner.

An experiment relating to oil-colours, of great uſe to travellers of ſome kinds; to the chief officers of camps and armies, to ſeamen and ſuch like.

This experiment is no other than a diſcovery of the way and myſtery of making oil-cloth, now uſed for hat-caſes, and that is this; take of drying oil, ſet it on the fire and diſſolve it in ſome good roſin, or (which is better, but dearer, gum-lack) and let the quantity be ſuch, as may make the oil thick as a balſam, for it muſt be ſo thin as to run about if ſpread upon a cloth.

When the roſin or gums are diſſolved, you may either work it of itſelf, or add to it ſome colour, as verdigreaſe for a green, or umber for a hair colour, or indico and white for a light blue.

This varniſh, if ſpread on canvas, or any other linnen-cloth, ſo that the cloth be fully drenched and intirely glazed over with it, and ſuffer'd to dry thoroughly, is impenetrable for all manner of wet; and if carriers and ſuch kind of perſons that are neceſſitated to travel in all manner of weathers, had but little light canvas cloaks made for them of ſuch cloth, and hats covered on the outſide with the ſame, theſe cloaks and hats would ſecure them from wet as well as if they remain'd ſtill in their own houſes; for as I ſaid before, no wet will penetrate through it: four and twenty hours rain would make no more impreſſion upon it, than if it had never rain'd.

The officers tents in an army or camp, if cover'd over with this varniſh'd cloth on the top, would preſerve them as ſecurely from all wet as the beſt houſes, and be as warm and dry; neither will there follow any great inconvenience in decamping: for cloth ſo varniſh'd is almoſt as pliable as the naked cloth, and not very much more weighty, eſpecially if the varniſh be laid on plain, without any colour mixt with it; for that is both lighter and more pliable.

The ſame advantages may ſeamen reap by it, or any other perſons that muſt neceſſarily attend in ſtorms and rain.

A ſheep-skin boot well liquored with this varniſh after the boot is made, and ſo thoroughly done over as to lie with a gloſs on the outſide, ſhall endure more wet than the beſt neat's-leather boot, being alſo much more pliable, eaſy and light, the ſame may be ſaid of ſhoes in great part.

The great reaſon why the oil-hat-caſe has not been more often in uſe, is by reaſon of the difficulty required to form it into garments; and then the very hat-caſes themſelves do let water in at the ſeams: but this varniſh being laid on in the ſeams after the garments are made, does ſo intirely ſecure every part, as there's no poſſibility or place for the wet's admittance.

The ſame may be of advantage to abundance of other humane neceſſities, too long here to enumerate; and for ſecuring any kind of timber-work, it equals painting with colours in oil, and much more eaſy to attain; for linſeed-oil and roſin are much more eaſily melted together by boiling, than colours can any ways be ground; and being of the conſiſtence of a balſam, works delicately with a bruſh, and of itſelf, without the addition of colours, bears a body ſufficient to ſecure all manner of timber work-equal to moſt oil colours.

In the working of it there's no great skill required, if you can but uſe a painter's bruſh; only let the matter you lay it on be thoroughly drench'd, that the outſide may be glazed with it: if you deſire a colour on the outſide, you need only grind a colour with the laſt varniſh you lay on.

PAINTING *in* OIL. The ancients, as is ſaid elſewhere, knew nothing of the art of painting in *oil*; but it was found out and practis'd by a *Flemiſh* painter in the fourteenth century.

It may be truly ſaid, that *painting* then receiv'd a very great improvement, and a wonderful conveniency; for by this means the colours of a picture keep a long while; and a luſtre and union are added to them of which the antients were ignorant, whatever varniſh they made uſe of to ſpread over their painting; and yet all this ſecret that lay hid ſo long, conſiſts in nothing but in grinding the *colours* with *oil of nuts*, or *linſeed-oil.*

'Tis true this ſort of work is very different from *Freſco* and *Diſtemper*; for the oil not drying ſo ſoon, the work muſt be touch'd over ſeveral times. But then on the other hand the painter has the advantage of more time to finiſh his picture, and touch over again all the parts of the figures, which he that works in *Diſtemper* and *Freſco* has not.

The oil alſo gives the work a greater force, becauſe the black becomes more *black*, when 'tis tempered with oil, than when 'tis tempered with water.

All the *colours* run better together, are more ſoft, more delicate and more agreeable, there being an union and tenderneſs in this *manner*, which is not in any other.

One may paint in oil againſt walls, on wood, on cloth, on ſtones, and all ſorts of metal.

The thing on which the painter intends to paint muſt in the firſt place be prepared by a *primer*, as the artiſts call it; which ſeems to make the ground, and renders the field very equal and ſmooth.

If he is to paint againſt a wall, when it is very dry, he muſt lay on two or three *layers* of boiling hot oil, and that as often as he thinks requiſite, even till he perceives the plaiſter to be greaſy, and will imbibe no more oil.

He then takes *white-chalk*, *red-oaker* and *other earths*, and grinds them to a conſiſtence, of which he lays a layer on the wall; when that is dry, he deſigns his ſubject, and afterwards paints upon it, mixing a little varniſh among his *colours*, that he may not be oblig'd to varniſh them when painted.

Some prepare the wall after another manner to dry it the more, that the moiſture may not make the *colours* ſcale off; as it often happens by the *oil's* oppoſing it, and hindring its coming out; to prevent this, they make a plaiſter of lime and marble duſt, or a cement of pounded tiles, which they beat with a trowel to fine it, and then lay on the linſeed-oil with a great bruſh.

After this they prepare a compoſition of *Greek pitch*, *maſtich* and *varniſh*, which they boil together in an earthern pot, and then ſpread it over the wall with a bruſh, and chafe it in with a hot trowel, to extend and ſmooth it the better; afterwards they lay on chalk, red-oaker, *&c.* as above-mentioned, before they deſign any thing.

Some have ſtill another way, they make a plaiſter of *lime-mortar* with a cement of *tile* and *ſand*, and when that is dry, they make another of *lime* and *cement* well ſifted, and droſs of iron, as much of the one as of the other; all which being well pounded and incorporated together with whites of eggs and linſeed-oil, they make the fineſt plaiſters in the world.

But you muſt not fail to take care, not to leave the *plaiſter*, while it is freſh laid on, nor till well ſpread all over with the trowel, and ſmooth every where; for otherwiſe it will cleave in ſeveral places.

When it is dry, they lay on the colours as before mentioned.

When the *painter* would paint upon wood, he firſt bruſhes it very well with a bruſh, and then lays on a *layer* of *white*, tempered with *paſte*, before he covers it with oil. But now cloth is moſt made uſe of, eſpecially for large *pictures*, by reaſon of their more eaſy carriage from one place to another than wood, which is heavy, and beſides apt to crack.

Painters generally chuſe *ticking* or the ſmootheſt cloth they can get; and when 'tis well ſtretch'd upon a frame, they lay on a *layer* of *paſte-water*, and then rub it over with a pumice-ſtone to take off the knots.

The *paſte-water* ſerves to ſmooth down all the little threads in the cloath and fill the little holes, that the *colours* may not paſs over them.

When the cloth is dry, they lay on a colour that will not kill the other colours, as *red-oaker*, which is a natural earth of ſubſtance, and with which they ſometimes mix a little white-lead, that it may dry the ſooner.

This colour is firſt ground with *nut* or *linſeed-oil*, and to lay it on of what thickneſs they pleaſe, they have a great knife for that purpoſe.

When it is dry, they rub it over again with a *pumice-ſtone* to ſmooth it; then if they pleaſe, they lay another *layer* compounded of *white-lead*, and a little of the *black* of *coal*, to make the ground *greyiſh*; and in both ways they put on as little colour as they can, that the cloath may not break, and the colours, that are to be laid on upon it, may keep the better.

If the primed cloath is not thus at firſt oiled, but the painter falls to *painting* at once, the colours will look better and remain more beautiful.

In ſome pieces of *Titian* and *Paulo Veroneſe*, 'tis obſerv'd that their firſt lay was of *diſtemper*, on which they afterwards painted with oil colours; by this means their works look'd the more lively and freſh: for the *diſtemper* attracted and imbib'd the oil that was in the colours, and was the cauſe that they remain'd the more beautiful, the oil taking off a great deal of their vivacity.

For which reaſon thoſe who would have their pieces keep freſh, make uſe of as little oil as they can, and keep their colours the firmer, by mixing with them a little *oil of ſpike*, which ſoon evaporates, but ſerves to make them run the better, and renders them more pliable in working.

Another cauſe of colours loſing their beauty, is when the painter works them too much in mixing them; for being jumbled together, they change and corrupt one another, and take a vay their vivacity: wherefore he muſt be careful to uſe them properly, and lay the colours each in its place, without mingling them too much with the pencil or bruſh; alſo not to temper adverſe colours together, as blacks with others; particularly *ſmoak-blacks*; but to uſe them apart as much as poſſible.

And when he would give the more force to his work, he ſhould ſtay till it is dry, to touch it over again with colours that will not damnify the others.

It is a conſiderable thing towards the preſervation of the beauty of their pictures: for there have been ſome which have been much upon the eaſel, and yet the colours have not been laſting, becauſe thoſe who us'd them, work'd and jumbled them too much together with the bruſh and pencil, thro' too much fire.

Thoſe who paint with judgment, lay them on with leſs precipitation, put them thicker, cover and recover their carnations ſeveral times, which the painters call *well-kneading*.

As for painting the cloth at firſt with a lay of *diſtemper*, 'tis true that is not often done, becauſe it may then ſcale, and will not roll up but with difficulty: for which reaſon *painters* have been contented to put on a lay of colours in oil; but when the cloth is good and very fine, the leſs colour that is put on it in priming it is the better, and the painter muſt always be careful that his oil and colours be good.

When a painter is to work on *metal*, marble, or any other ſtone, he need only lay on a thin *layer* of colours before he deſigns any thing, and not at all on the ſtones where he would have the ground appear, as on marble when it is of an extraordinary colour.

All the colours us'd in *Freſco* are good in oil, except *lime-white* and marble duſt; but what follows may be made uſe of.

White-lead, taken from common lead that has been buried. After it has lain in the ground ſeveral years, ſcales come upon the lead, which changes colour and turns to a beautiful white: tho' this white ſubſiſts in painting, yet it has a very bad quality; but the *oil* corrects it by grinding it on a ſtone.

Ceruſs, is alſo the ruſt of lead, but fouler.

Maſticot, yellow and white, is made of lead calcinated.

Red-arſenick, is us'd with calcinating and without: to calcine it, it is put into an iron box, or in a pot well ſtop'd: but few people calcinate it, or indeed uſe it; becauſe the vapour is mortal, and 'tis very dangerous to make uſe of it.

Red-lead, taken out of lead-mines, is not much us'd, becauſe it is an enemy to other colours.

Vermilion, taken out of ſilver mines, it being a mineral, does not keep its colour in the air.

Lake, which is made of *cochineal* or *Brazile* wood, or other woods, there being ſeveral kinds of it, does not keep in the air.

Aſh-blues and *aſh-greens*, are ſeldom made uſe of but in landskips.

Indico, is alſo us'd in skies and draperies; when it is well us'd, it keeps beautiful a long time: too much oil muſt not be mixt with it; lay it a little brown, becauſe it is apt to change; it is made uſe of in painting with ſucceſs, it being good for greens.

The *Avignion* grain, which is tempered and boil'd; then the aſhes of *vine-twigs* or chalk are thrown in, to give it a ſubſtance, as is done in lake, and after that it is all ſqueez'd thro' fine lawn.

Smoke-black, which is a bad colour; but eaſy to paint black *draperies*.

Bone-black and burnt-ivory, which according to *Pliny* was invented by *Apelles*.

Verdegreaſe, is the plague of all colours, and enough to ſpoil a whole picture, if the leaſt part of it enters into the priming of the cloth; yet 'tis a beautiful and an agreeable colour.

PAINTING *in* OIL, *and the materials.*

1. *Painting in oil*, is the ſame as that of *limning* before-mentioned, perform'd with colours made up or tempered with oil.

2. The materials us'd in this art, are chiefly ſeven; 1. *the eaſel*; 2. *pallet*; 3. *the ſtraining-frame*; 4. *the primed-cloth*; 5. *pencils*; 6. *the ſtay*; 7. *colours*.

3. The *eaſel*, is a frame made of wood, (much reſembling a ladder, with flat ſides and full of holes, to put in two pins to ſet the ſtraining-frame and cloth upon, either higher or lower at pleaſure, being ſomething broader at the bottom than at the top) on the backſide of which is a ſtay; by which the eaſel may be ſet either the more ſloping or more upright.

4. The *pallet*, is a thin piece of wood (either of pear or walnut-tree) about a foot in length, and ten inches in breadth, in almoſt an oval form, at the narroweſt end of which is an hole, to put in the thumb of the left-hand, near which there is a notch cut, that the *pallet* may be held in the hand. *The uſe of this is to hold and temper the colours upon.*

5. The *ſtraining-frame*, made of wood, on which the primed cloth, that is to be painted upon, is faſtened with nails. Theſe frames ought to be of ſeveral ſizes, according to the ſize of the cloth.

6. The *primed cloth*, is that which is to be painted upon, and is to be prepar'd as follows;

Take good canvas, and firſt ſmooth it over with a ſleek-ſtone, ſize it over with good ſize and a little honey, and let it ſtand to dry; then lay it over once with whiting and ſize mix'd with a little honey, and the cloth is prepar'd: on this you may firſt draw the picture with a coal, and afterwards lay in the colours. Where by the way you may take notice, that the uſe of honey is to prevent it from cracking, peeling or breaking out.

7. *Pencils* of all ſizes, from a pin to the bigneſs of a finger, which are call'd by ſeveral names; as ***Dutch quill fitched*** and *pointed*; *gooſe quill fitched* and *pointed*; *ſwan quill fitched* and *pointed*; *jewelling pencils* and *briſtle pencils*, ſome in quills, ſome in tin-caſes, and ſome in ſticks.

8. The *ſtay* or *molſtick*, is a ſtick of ***Brazile*** wood, (or the like) in length about a yard, having a ſmall ball of cotton at one end of it, fix'd hard in a piece of leather, about the ſize of a cheſnut, which is to be held in the left-hand while you

are working, and laying the end which hath the leather ball, upon the cloth or frame, you may reſt your right arm upon it.

9. The colours are in number ſeven, as has been ſaid elſewhere, *viz. white*, *black*, *red*, *green*, *yellow*, *blue* and *brown*.

Of which ſome may be tempered upon the pallet at firſt, ſome muſt be ground, and then tempered; and others muſt be burnt, ground, and laſtly tempered.

10. As for the ſize, for ſizing the primed cloth;

Boil glue well in fair water till it be diſſolv'd, and it is made.

11. To make the *whiting* for the ground of the cloth;

Mix ground whiting with the ſize, and with it white the cloth or board, (being firſt made very ſmooth) and dry them, then do them over again a ſecond or a third time. Afterwards ſcrape them ſmooth, and lay it over with white-lead tempered with oil.

12. To keep the colours from skinning over;

Oil colours, if they ſtand but a little time before they are us'd, will have a skin grow over them; which may be prevented by being put into a glaſs, and putting the glaſs three or four inches under water, and then they will never thin nor dry.

13. To cleanſe the grinding-ſtone and pencils;

Grind curriers ſhavings upon the grinding-ſtone, if it be foul, and afterwards crumbs of bread; and they will fetch off all the filth.

And as for your pencils, dip them in oil of turpentine, and ſqueeze them between your fingers, and they will come very clean.

The colours in general, and their ſignification.

1. The chief *whites* for painting in oil, *white-lead*, *ceruſs* and *ſpodium*.

2. The chief *blacks*, are *lamp-black*, *ſea-coal-black*, *ivory-black*, *charcoal* and *Colen's earth*.

3. The chief *reds*, are *vermilion*, *cinnabar*, *lake*, *red-lead*, *Indian-red*, *ornotto*.

4. The chief *greens*, are *verdegreaſe*, *terra-vert*, *verditer*.

5. The chief *yellows*, are *pink*, *maſticote*, *Engliſh-oker*, *ſpruce-oker* and *orpiment*.

6. The chief *blues*, are *blue bice*, *indico*, *ultramarine* and *ſmalt*.

7. The chief *browns*, are *Spaniſh-brown*, and *burnt ſpruce umber*.

8. The following colours need not be ground at all, but only tempered with oil upon the pallet, *viz. lamp-black*, *verditer*, *bice*, *vermillion*, *orpiment*, *maſticot*, *ſmalt*, *ultramarine*.

9. Theſe colours following are to be burnt and ground in oil; *ceruſs*, *oker*, *ivory*, *umber*.

10. All the reſt are to be ground with *linſeed oil*, except white-lead when it is us'd for linnen, which then is to be ground with *walnut-oil*, becauſe the *linſeed-oil* will make it turn yellow.

As to the nature and ſignification of COLOURS.

Black, ſignifies wiſdom, ſobriety and mourning.
Red, ſignifies juſtice, vertue and defence.
Flame-colour, beauty and deſire.
Maidens-bluſh, envy.
Fleſh-colour, ſignifies laſciviouſneſs.
Carnation, craft, ſubtilty and deceit.
Green, ſignifies hope.
Graſs-green, youth, youthfulneſs and rejoicing.
Yellow, ſignifies jealouſy.
Perfect yellow, joy, honour, and greatneſs of ſpirit.
Lemon-colour, alſo ſignifies jealouſy.
Gold-colour, avarice.
Straw-colour, ſignifies plenty.
Orange-tawney, ſignifies pride, alſo integrity.
Tawney, ſignifies forſaken.
Blue, ſignifies true faith and continued affections.
Azure, ſignifies conſtancy.
Violet-colour, ſignifies a religious mind.
Willow-colour, ſignifies forſaken.
Poppinjay-green, wantonneſs.
Purple, ſignifies fortitude.
White, ſignifies death.
Milk-white, ſignifies innocency, purity, truth, integrity.

The *white*, *black*, *red* and *green*, are colours held as ſacred in the church of *Rome*.

White is worn on the feſtivals of the Virgin *Mary*, ſaints, confeſſors and angels, to intimate their innocency.

Red on the ſolemnities of the apoſtles and martyrs of *Jeſus Chriſt*.

Black in Lent, and other faſting-days.

Green is worn between the *Epiphany*, and *Septuageſima*, and between *Pentecoſt* and *Advent*.

The fitting the colours for painting.

1. Diſpoſe the ſeveral colours upon the pallet, at convenient diſtances the one from the other, that they may not intermix: firſt lay on the *vermilion*, then the *lake*, then the *burnt oker*, then the *Indian-red*, *pink*, *umber*, *black* and *ſmalt* in their order. And lay the white next to your thumb, becauſe that is us'd the oftneſt; for all the ſhadows are to be lightened with it; and next to the white lay a ſtiff ſort of *lake*; and then the pallet will be furniſhed with ſimple colours for a face.

2. To temper theſe colours for various complexions, do a follows:

Take one dram of *white*, two drams of *vermilion*, of *lake* the ſame quantity, temper them together, and lay them aſide for the deepeſt carnation of the face; to part of the aforeſaid mixture, put a little more *white* for a light carnation; and to part of that put more *white* (which temper on the pallet) for the lighteſt colour of the face.

3. The faint ſhadows for a fair complexion.

Take *ſmalt* and a little *white* for the eyes; to part of that add a little *pink*, and temper by itſelf, for faint greeniſh ſhadows in the face.

4. The deep ſhadows for the face.

Take *cinnabar*, *lake*, *pink* and *black*, of each a ſufficient quantity, and temper them together; if the ſhadows ought to be redder than what you have tempered before, add more *lake*; if yellower, add more *pink*; and if bluer or greyer, add more *black*; and then will the pallet be fitted with colours.

5. For a brown or ſwarthy complexion.

The ſingle colours being laid on the pallet as before, and tempered to the *white lake* and *vermilion*, put a little *burnt oker* for a *tawney*; and for heightening, add ſome yellow oker, juſt enough to change the colour and no more; the faint and deep ſhadows are the ſame as are mentioned before.

6. For a *tawney* complexion, the colours are the ſame with the former; but the ſhadows are different, which muſt be made of *burnt oker* and *umber*, (which will ſcent well.) If the ſhadows be not yellow enough, add a little *pink* to it.

7. For a *black* complexion.

The dark ſhadows are the ſame as before; but for heightening, take *white*, *black*, *lake* and *burnt oker*, in tempering of which, put in the white by degrees, till you come to the lighteſt of all.

Where you are to obſerve, that the ſimple colours that were at firſt laid on the pallet and tempered, ſerve for ſhadows for all complexions; and that all deepenings ought to be with *black*, *lake* and *pink* tempered together.

Oil colours for LANDSKIP.

For a light green, uſe *pink* and *maſticot*, heightened with *white*.

For *a ſad green*, uſe *indico* and *pink*, heightened with *maſticot*.

For *ſome trees*, uſe *lake*, *umber* and *white*; for others *charcoal* and *white*; for others, *umber*, *black* and *white*, with ſome *green*; and ſometimes *lake* or *vermilion*, with other colours.

For *wood*, uſe *lake*, *umber* and *white*, mixing ſometimes a little *green* withal.

As for wood colours, they are compounded either of *umber* and *white*, *charcoal* and *white*, *ſea-coal* and *white*, *umber*, *black* and *white*, or with ſome *green* added: to which you may add ſometimes a little *lake* or *vermilion*, as in the barks of trees.

For *a red sky*, uſe *lake* and *white*; and for ſun-beams or *yellow* clouds at ſun-riſing or ſetting, uſe *maſticot* and *white*.

For *an azure sky*, which ſeems a-far off, uſe *oil-ſmalt* or *bice*, tempered with *linſeed-oil*; but theſe muſt not be ground, for *ſmalt* or *bice* utterly loſe their colour in grinding.

For *a night-sky*, or clouds in a ſtorm, uſe *indico* deepned with *black*, and heightened with *white*.

For *fire*, where you would have it reddeſt, lay *red-lead* and *vermilion* tempered together; where it is *blue*, lay *oil-ſmalt* and *white-lead*; where it is *yellow*, take *maſticot*, and work it over in certain places, where you would have it ſhine moſt, with *vermilion*.

Of Colours for GARMENTS *in the general.*

For *black*, let the dead-colour be *lamp-black* and *verdegreaſe*, and when it is dry, go over it with *ivory-black*; but before the ſecond going over, heighten it with *white*.

For a *ſad red*, uſe *Indian-red*, heightened with *white*.

For a *light red*, uſe *vermilion*, and glaze it over with *lake*, and heighten it with *white*.

For a *ſcarlet*, uſe *vermilion*, and deepen it with *lake* or *Indian-red*.

For *blue*, uſe *indico* and white; firſt lay the *white*, and then the *indico* mix'd with *white*, then deepen it with *indico*, and when dry glaze it with *ultramarine*, which will never fade.

Smalt will turn *black*, and *bice* will turn *green*.

For *green*, uſe *bice* and *pink*, deepen it with *indico* and *pink*, and heighten it with *maſticot*.

For a *ſad green*, uſe *indico* and *pink*.

For a *light green*, mix *pink* and *maſticot*.

For a *graſs-green*, mix *verdegreaſe* and *pink*.

For a *hare-colour*, uſe *umber* and *white* for the ground; *umber* and *black* for the deeper ſhadows; *umber* and *Engliſh oker* for the meaner ſhadows; and *white* and *Engliſh oker* for the heightening.

For *yellow*, uſe *maſticot*, *yellow-oker*, *umber*; lay *umber* in the darkeſt places; *oker* and *white* in the mean or middle place; and *maſticot* and *white* in the lighteſt places.

For *orange-colour*, lay the lighteſt parts with *red-lead* and *white*, the deeper parts with *lake*; and if there be occaſion, heighten it with *white*, and the mean parts with *red-lead* alone.

Of OIL *colours for* VELVET.

1. For *black velvet*, uſe *lamp-black* and *verdegreaſe* for the firſt ground; when that is dry, temper up *ivory-black* and *verdegreaſe*, and ſhadow with *white-lead* mix'd with *lamp-black*.

2. For *red velvet*, uſe *vermilion*, and ſhadow it with *Spaniſh brown*, and where you would have it darkeſt, ſhadow it with *ſea-coal-black* and *Spaniſh brown*, tempered with the aforeſaid colours; let it be dry, and then gloſs it over with *lake*.

3. For a *crimſon* or *carnation velvet*, uſe *vermilion*, with which mingle *white-lead* at pleaſure.

4. For a *green velvet*, uſe *lamp-black* and *white-lead*, and having work'd it like a *ruſſet velvet*, let it dry; then draw it over with *verdegreaſe* mix'd up with a little *pink*.

5. For a *ſea-green velvet*, uſe *verdegreaſe* alone, and lay it over with *ruſſet*.

6. For a *graſs-green velvet*, put to it a little *maſticot*, and ſhadow theſe greens with *ruſſet*, which you ſhould lay according to the deepneſs of the *green*.

7. For a *hair-colour velvet*, uſe ground *umber* alone, and where you would have it brighteſt, heighten it with ſome *white-lead* about the folds; either lighten or darken with *white-lead* and *umber*.

8. For *blue velvet*, uſe *ſmalt* tempered alone.

9. For *yellow velvet*, uſe *maſticot* and *yellow oker*, and where you would have it darkeſt, ſhadow it with *umber*.

10. For *aſh-colour velvet*, uſe *charcoal*, *black* and *white-lead*, and lighten with *white-lead*: a colour like to a dark *ruſſet* will be an *aſh-colour*.

11. For a *tawny coloured velvet*, uſe *Spaniſh-brown*, *white-lead* and *lamp-black*, with a little *verdegreaſe* for ſhadowing where need is; and when dry, gloſs its over with *lake* and a little *red-lead*.

12. For *purple velvet*, uſe *ſmalt* and *lake*, of each a like quantity, temper them up (either light or deep, as you pleaſe) with *white-lead*.

Take notice that in painting *velvet*, you muſt at firſt work it ſomewhat ſad, and afterwards give it a ſudden brightneſs.

To dye ſtuff, &c. *of an* OLIVE *colour*.

This muſt be ordered as the *brimſtone yellow*, after which prepare ſuds of *galls* and *copperas* (but not ſtrong) through which paſs the ſtuffs two or three times, according as you would have the dye lighter or deeper, and it will produce an olive colour.

ISAAC OLIVER was a famous limner, who flouriſhed about the latter end of the reign of queen *Elizabeth*. He was eminent both for hiſtory and face-painting, many pieces of which were in the poſſeſſion of the late Duke of *Norfolk*; and being a very good deſigner, his drawings were finiſhed to a mighty perfection; ſome of them being admirable copys after *Parmeggiano*, &c. He received ſome light in that art from *Frederico Zucchero*, who came into *England* in that reign. He was very neat and curious in his limnings, as may be ſeen by ſeveral hiſtory-peices of his in the queen's cloſet. He was likewiſe a very good oil-painter in little.

He died between fifty and ſixty, in King *Charles* I time, and was buried in *Black-fryars*, where there was a monument ſet up for him, with his buſto; all which has been deſtroyed by fire.

PETER OLIVER was ſon of the before-mention'd, who had inſtructed him in his art; he became exceeding eminent in miniature, inſomuch that he out did his father in portraits. He drew King *James* I. Prince *Henry*, Prince *Charles*, and moſt of the court at that time. He lived to near ſixty, and was buried in the ſame place with his father about the year 1664.

ONYX a precious ſtone, accounted a ſpecies of *Opal*.

Its colours are uſually white and black, which appear as diſtinct as if laid on by art.

There are ſome brought from *Arabia* mix'd with a greyiſh hue; which after taking off one lay or row, ſhew another underneath of a different colour.

OPAL is a precious ſtone of various colours: in it are ſeen the red of the ruby, the purple of the amethyſt, the green of the emerald; beſides yellow, and ſome black and white.

When this ſtone is broke, moſt of theſe colours diſappear; which is a ſign that they only ariſe by reflection, from one or two of the principal ones.

Its form is always either round or oval; its prevailing colour white. The diverſity of its colours makes it almoſt of equal value with the *ſapphire* or *ruby*.

Tavernier affirms, that there are mines of Opal in *Turky*; other authors tell us, it is produc'd in *Bohemia*, *Hungary*, *Arabia*, *Egypt*.

Pliny among the ancients, and *Porta* and *Albertus* among the moderns, are very large upon the vertues of the *Opal*, the antients call it *paideros*, from its promoting love and good-will.

Artificial OPAL. M. *Colepreſs* gives us an account of the manner of counterfeiting *Opal*, as practis'd at *Haerlem* in *Holland*, and is as follows:

When the compoſition is melted, they take out ſome on the point of an iron rod; which being cool'd either in the air or water, is colourleſs and pellucid; but being put into the mouth of the furnace by the ſame rod, and theſe turned by the hand for a little ſpace, hath its little bodies ſo variouſly poſited in various parts of the ſame piece, that the light falling on them, being variouſly modified thereby, repreſents the ſeveral colours, ſeen in the natural *Opal*.

He ſays the counterfeit *Opal* is very lively, and thinks it is only perform'd by degrees of heat, which produce the colours; and that the colours may be deſtroy'd and reſtor'd, according to the various motions of its particles by heat.

OPINION, ſays *Hippocrates*, reſembles a young woman not altogether ſo fair and lovely as Truth; yet not deform'd, or ill-proportioned; being rather impudent, than modeſtly bold in her demeanour, with her hand ſtretched forth to take whatſoever is offered and preſented to her.

OPINION, is repreſented [*in Painting*, *&c.*] by a woman in a genteel garb, neither handſome nor disfigured, but ſeems daring and bold, ready to fly in one's face, upon every thing ſhe fancies is miſrepreſented; and therefore has wings on her hands and ſhoulders. Her face ſhews that there is no opinion but may be maintained and embraced, nor any ſo well grounded but may be diſliked.

OPS
TELLUS } ſays *Martianus*, (the wife of *Saturn*) is repreſented as an old woman of a large body, and continually bringing forth children, with which ſhe is encompaſſed or beſet round, clad in a green veſtment, with a veil over all her body, ſpotted with divers colours, and wrought with a vaſt number of knots, and ſet with all ſorts of gems and metals.

She was alſo repreſented in the form of an *antient* woman, having her head encompaſs'd with ears of corn, holding in her hand a poppy-head; drawn in a chariot by two fierce and untamed dragons.

The *Earth*, is alſo call'd *Ceres*, which has been painted by many, holding torches, lights and firebrands in her hand. And ſometimes in a long green mantle.

Iſidorus relates, that this goddeſs was painted with a key in one of her hands, which intimates that the bowels of the earth are lock'd up in the winter-time by the cold; which are unlock'd again at the approach of ſpring and ſummer.

Varron (from *Boccace*) deſcribes *Ops* or *Tellus* thus; ſhe is, ſays he, crown'd with a crown, carv'd or engraven with caſtles and towers; clad in green raiment overſhaded with boughs: holding in one hand a ſceptre, and in the other a ball or globe; and her chariot has four wheels, drawn by four lions.

By the crown, is ſignified the habitation of the earth; by the greenneſs and boughs, the encreaſe of the earth; by the ſceptre, the kingdoms and government of the world; by the ball, the roundneſs of it; by the chariot, the continual motion, change and alteration of things; by the lions, the wiſdom and ſtrength of mankind, by which affairs are carried on and manag'd.

ORANGE COLOUR.

An orange-colour for waſhing prints is made by laying on a teint of *Gamboge*, and over that ſome *minium* or red-lead waſh'd and rendred fine and fit for uſe; it not being fine enough to paint with, as it is bought at the ſhops; and beſides, it will change or turn black, after a few weeks, if it be not refin'd; but if it be well prepar'd, will be very laſting and beautiful.

But this you may take notice of, that an ounce will not produce above 20 grains of a good colour, to ſtand the teſt of painters.

This colour may be mix'd with *gamboge*, upon a white *Dutch* tile, to render it of the teint you would have it, either ſofter or ſtronger; or the *gamboge* may be glaz'd over and ſtrengthened with the tincture of *ſaffron*, which will make it glare into a ſtrong *orange*. See MINIUM.

Some may think it ſtrange, that as for orange colours I mention thoſe deep ſorts tending to purples: but I mention them as ſhades; and without which, the orange or red could not appear with any brightneſs.

To dye SILK *an* ORANGE *colour.*

Firſt, lay the white ſilk in alom-water, in the ſame manner as the yellow, then take the eighth part of a pound of *Orleans*, diſſolve it in water for the ſpace of one night, add to it one ounce of pot-aſhes, boil it for half an hour, then add an ounce of beaten *turmerick*; ſtir it very well, let it ſtand a little while, and then put in the alomed ſilk, and let it remain there, one, two or three hours, according as you would have the colour, light or dark; rinſe it in fine ſoap-ſuds, till 'tis perfectly clean, then beat and dry it.

ORDONNANCE } ORDINANCE } [*in painting*] is us'd for the diſpoſition of the parts of a painting, either with reſpect to the whole piece, or to the ſeveral parts; as the *groups*, *maſſes*, *contraſts*, *aſpects*, &c.

The doctrine of ORDONNANCE *is compriz'd in the following rules.*

In the *Ordonnance*, there are three things to be regarded, *viz.* the *place* or *ſcene* where; the *diſtribution* how; and the *contraſt*.

As to the firſt, regard is be had as to the *diſpoſition* of things to ſerve as a ground-work; and to the *plan* and poſition of bodies: under the former of which, comes firſt *landskip*, whether an uninhabited place, where there is a full liberty of repreſenting all the extravagancies of nature; or inhabited, where the ſigns of cultivation, *&c.* muſt be exhibited. See LANDSKIP.

2. The *building*, whether ruſtic, wherein the painter's fancy is at liberty: or *regular*, wherein the orders are to be nicely attended to.

3. The mixture of both; in which it is a maxim to compoſe in great pieces, and to make the ground-plot big enough; to neglect ſome little places, in order to beſtow more on the whole maſs; and to exhibit a view of the more conſiderable places with the more advantage; and to repreſent ſome agitation in all things that move.

As to the *plan* of bodies; they are either ſolid, which again are either ſo by nature, and muſt be proportioned to their places; or *artificial*, where regard muſt be had to the rules of *geometry*, *perſpective*, *architecture*, &c.

Or the *bodies* move; and this they do, either by a voluntary motion, wherein great regard muſt be had to proportion them to their ſituation; and to ſtrengthen them by the regarding equilibrium; or by ſome extraordinary power, as machines, *&c.* where the cauſes of their motions muſt appear.

Or they are things at a diſtance, in all which an even plane muſt ſtill be propos'd, to find their preciſe ſituation, and ſettle their place by ſudden breaks and diſtances, agreeable to perſpective.

In placing the figures, regard is to be had,

1. To the *group*, which connects the ſubject and ſtays the ſight.

In this the *knot* or *nodus* which binds the *group* is to be conſidered; and alſo the nearneſs of figures, which may be call'd the chain, in as much as it holds them together; that the *group* be ſuſtain'd by ſomething looſe and diſtinct from it, and by the ſame join'd and continued to the other *groups*; and that the lights and ſhadows be ſo diſpos'd, as that the effects of all the parts of the compoſition may be ſeen at once.

2. As to the *actions*, forc'd attitudes are to be avoided; and ſimple nature ſhould be ſhown in her moſt advantageous poſtures.

The nudities ought not to be ſhewn in weak and lean figures; but rather you ought to ſeek for occaſions to cover them. A ſpecial care ought to be taken, that in all human figures, the head be plac'd in the middle between the ſhoulders; the trunk on the haunches, and the whole on the feet.

3. As to the *drapery*, this muſt be ſo adjuſted, that it may appear real garments, and not ſtuffs thrown looſely on.

P.

HENRY PAERT, was firſt diſciple of *Barlow*, and afterwards of *Stone* the famous copier. He was brought up a ſcholar, and ſpent ſome of his time at one of our Univerſities. He painted under Mr. *Stone* for ſeveral years, but afterwards fell to face-painting by the life, yet his talent ſeemed to be for copying. He copied with great aſſiduity, the greateſt part of the hiſtory-pieces of the royal collection in *England*; in ſeveral of which he had good ſucceſs: what he ſeemed to want, was a warmth and beauty of colouring. He died in *London*, about the year 1697 or 1698.

SIMPLE *bodily* PAIN; this affection or paſſion produces proportionally the ſame motions as that which is acute or extreme; but not ſo ſtrong.

The eye-brows do not approach and riſe ſo much; the eye-balls appear fix'd on ſome object; the noſtrils riſe, but the wrinkles in the cheeks are leſs perceiveable, the lips are further aſunder towards the middle, and the mouth is half open.

ACUTE PAIN is an affection of the body, makes the eye-brows approach one another and riſe towards the middle; the eye-balls are hid under the eye-brows, the noſtrils riſe and make a wrinkle in the cheeks, the mouth is half open and draws back. All the parts of the face are agitated in proportion to the violence of the pain, and all the motions of the viſage will appear ſharp.

PAINTING is the art of repreſenting natural bodies, and giving them a kind of life by the turn of lines, and the degrees of colours.

Painting is ſaid to have its riſe among the *Egyptians*, in repreſenting divers animals, *&c.* as hieroglyphicks. But the *Greeks*, who learn'd the firſt rudiments of them, carried it to a great degree of perfection.

The *Romans* had alſo conſiderable maſters in this art in the latter times of their commonwealth, and thoſe of their firſt emperors; but the inundation of the *Barbarians*, who ravag'd and deſtroy'd *Italy*, reduc'd painting again pretty near to its infant ſtate.

But in *Italy* it return'd again to its antient honour; and *Cimabue* betaking himſelf to the pencil in the xvth century, tranſlated the poor remains of the declining art, from a *Greek* painter or two, into his own country *Italy*.

Some painters of *Florence* ſeconded him, the firſt of which was *Ghirlandaio*, maſter to *Michael Angelo*; *Pietro Perugino*, maſter to *Raphael Urbin*; and *Andrea Verocchio*, maſter to *Leonardo da Vinci*.

But theſe ſcholars far ſurpaſs'd their maſters, and carried painting to a pitch, from which it has ever ſince been declining.

Theſe advanc'd painting not only by their own noble works, but alſo by the number of ſcholars they train'd up, and the ſchools which they form'd.

Michael Angelo in particular, founded the *Florentine* ſchool; and *Raphael Urbin* the *Roman*; and *Leonardo da Vinci* that of *Milan*.

To theſe muſt be added the ſchool of *Lombardy*, which became very conſiderable much about the ſame time, under *Georgian* and *Titian*.

Beſides theſe *Italian* maſters, there were on this ſide the *Alps*, others who had no communication with thoſe of *Italy*; as *Albert Durer* in *Germany*, *Hans Holben* in *Switzerland*, and *Lucas* in *Holland*. But *Italy*, and eſpecially *Rome*, was the place where the art was practis'd with the greateſt ſucceſs, and which from time to time produc'd the greateſt maſters.

Caraches, ſucceeded to the ſchool of *Raphael*, which has laſted in its ſcholars almoſt to the preſent time; wherein the *French* painters, encourag'd by the munificence of *Louis* XIV. ſeem almoſt to be in a condition, to vie with thoſe of *Greece* or *Italy*.

In *Paris* there are two conſiderable bodies of painters; the one of the *royal academy of painting*, and the other the *community of maſters in painting and ſculpture*.

M. *Freſnoy* divides the art of *painting* into three principal parts; *invention*, *deſign* and *colouring*; to which a fourth is added by ſome, *viz.* *diſpoſition*.

M. *Teſtling*, painter to *Louis* XIV. divides it ſomething more accurately, into the *deſign* or *draught*, the *proportion*, the *expreſſion*, the *clair obſcure*, the *ordonnance*, and the *colouring*. See theſe articles.

Painting is of various kinds, according to the materials us'd; the matter upon which they are apply'd; and the manner of applying them.

As *Painting in oil*, *in Water-colours*, *Freſco*, &c.

As to the art of painting in oil, that was unknown to the antients, and was firſt diſcovered and put in practice by *John Van Eyck*, or *John of Bruges*; about the beginning of the XIVth century. Till his time all the painters wrought in *Freſco*, or in water-colours.

This invention was of the greateſt advantage to the art, in that by this means the colours of a painting are preſerved much longer and better; and receive a luſtre and ſweetneſs which could never be attain'd to by the antients; what varniſh ſoever they made uſe of in covering their pieces.

The whole ſecret only conſiſts in grinding the colours with nut-oil, or linſeed-oil; but it muſt be own'd, that the manner of working is very different from that in *Freſco*; or in water; in that the oil does not dry near ſo faſt: which gives the painter an opportunity of touching or re-touching all the parts of his figures, as often as he pleaſes; which in the other methods of painting is a thing impracticable.

And beſides, the figures done in oil are capable of more force and boldneſs; in as much as the black becomes blacker, when ground with oil, than in water: beſides that all the colours mixing better together, make the colour the ſweeter, more delicate and agreeable, and give an union and tenderneſs to the whole work, inimitable in any of the other manners.

PAINTING *on walls*, when the wall is dry, they give it two or three waſhes with boiling oil; till the plaiſter remains quite greaſy, and will not drink in any more. Upon this they lay drying colours, *viz.* white chalk, red-oker, or other chalks beaten pretty ſtiff.

When this couch or layer is indifferent dry, the ſubject or deſign is sketch'd out, which is afterwards painted over with the colours mix'd with a little varniſh, to ſave the varniſhing afterwards.

In order to fortify the wall the better againſt moiſture, ſome cover it with a plaiſter of lime, marble-duſt, or a cement made of beaten tiles ſoak'd with linſeed-oil. And laſtly, they cover the plaiſter over with a compoſition of *Greek* pitch, maſtick and thick varniſh boil'd together hot; and when this is dry, they lay on the colours as before. Others make the plaiſter with lime-mortar, tile, cement and ſand; and after this is become thoroughly dry, they apply another of *lime*, *cement* and *machefer*, or *ſcum of iron*, all well beaten up together, and incorporated with whites of eggs and linſeed-oil, which does indeed make an excellent couch or plaiſter, this being dry: they lay on the colours as before.

PAINTING *on wood*; they uſually give their ground a couch, or lay of white temper'd with ſize; or they apply the oil above-mentioned: the reſt as painting on walls.

PAINTING *on linen or canvas*, is done as follows: they ſtretch the canvas on a frame, and then give it a couch or lay of ſize; and when it is dry, they go over it with the pumice-ſtone, to ſmooth off the knots.

By means of this ſize, the little threads and hair are all laid cloſe on the cloth, and the little holes ſtopp'd up, ſo that no colour can paſs through.

When the cloth is dry, they lay on oker, which is a natural earth, and bears a body; ſometimes mixing a little white-lead with it, to make it dry the ſooner. When it is dry, they go over with the pumice-ſtone to make it ſmooth.

After this, ſometimes a ſecond couch is apply'd, compos'd of white-lead, and a little charcoal-black, to render the ground of an aſh-colour; but care is to be taken in each manner, to lay on as little colour as poſſible, that the cloth may not break, and that the colours when they come to be painted over may be preſerv'd the better.

In ſome of the paintings of *Titian* and *Paolo Veroneſe*, we find they made their ground with water, and painted over it with oil; which contributed much to the vivacity and freſhneſs of their works. For the ground, by imbibing the oil of the colours, leaves them the more beautiful; the oil itſelf, taking away a deal of their vivacity.

Therefore you ſhould uſe as little oil as is poſſible, if you would have the colours keep freſh: for this reaſon ſome mix them up with oil of aſpic, which evaporates immediately, yet ſerves to make them manageable with the pencil

PAINTING *on ſtones or metals*; it is not neceſſary to lay them over with ſize, as on cloth, it is ſufficient to add a ſlight couch of colours, before the deſign is drawn on it; nor is even this done on ſtones where you would have the ground appear, as in certain marbles of extraordinary colours.

All the colours which are us'd in *Freſco*, are good in oil, except white of lime and marble-duſt

As for the different ways of painting, in Diſtemper, Freſco, Water-colours, Oil, &c. *See them in the proper places alphabetically.*

To cleanſe old PAINTING.

Make a lye of the aſhes of vine-branches, mix'd with freſh man's urine, dip a ſpunge in it and wipe it over, and it will much reſtore the fading, *&c.* or,

Take good *wood-aſhes*, ſearce them, or elſe *ſmalt* or powder-blue, and with a ſpunge and fair water, gently waſh the pictures you would cleanſe, (taking great care of the ſhadows) when you have ſo done, dry them well with a clean cloth.

Then varniſh it over again with ſome good varniſh, but ſuch as may be waſh'd off again, if there be occaſion.

As for the varniſh, uſe either common varniſh, (made with *gum-ſandrach* diſſolv'd in *linſeed-oil*, by boiling) or glair of eggs, and with your pencil go over the picture once, twice, or more with it, according as there ſhall be occaſion.

If your painting be *wainſcotting*, or any other joinery-work, you may uſe wood-aſhes, and mixing them indifferent thick with the water, rub over the painting with a ſtiff briſtle bruſh, as a ſhoe-bruſh, and ſcour, waſh and dry it, and afterwards varniſh it with common varniſh.

But if your paintings are more curious, as figures of men, beaſts, landskips, flowers, fruits, *&c.* then take ſmalt only, and with a ſpunge dipt in water, cleanſe it gently, and afterwards waſh it in fair-water, and having dry'd it well, varniſh it, and it will very conſiderably recover the luſtre of the pictures.

But this cleanſing of paintings ought not to be done too often, (*viz.* not except they are very much ſoiled) becauſe too frequent cleanſings of this kind, will by degrees wear off part of the colours: therefore you ſhould endeavour to preſerve their beauty by keeping them from ſmoak, duſt, flies, *&c.*

All pictures (but chiefly ſuch in which mixtures of white-lead are us'd) will be apt to grow tawney, to tarniſh or grow ruſty, as may be ſeen in all old pictures.

In order to prevent this, expoſe them to the hot ſun three or four days in *May* or *June*; and by that means the ill colour will be much drawn off, and the painting appear more freſh and beauful: if this be done annually, it will preſerve them wonderfully.

PALLAS MINERVA } *Minerva*, (as taken for *Bellona*) *Licophrones* ſays, was painted with a flaming firebrand in her hand.

Minerva, has been deſcrib'd by moſt writers in the ſhape of a young woman, of a lively and freſh countenance, yet of an angry look, a fix'd, ſtedfaſt eye, of a blueiſh green colour; compleatly arm'd at all points, holding in one hand a long ſpear, and in the other a target or ſhield of cryſtal, upon her helmet a garland of olive-branches; and having two children *fear* and *horrour* by her ſide, with naked knives in their hands, ſeeming to threaten; ſometimes the helmet is repreſented with a ſphinx, or a cock for a creſt, and two griffins on the ſides of it.

The *Greeks* painted her ſitting on a ſtool, and drawing forth fine threads from a diſtaff, the antients ſuppoſing her to be the inventreſs of ſpinning.

She is alſo painted in a blue mantle, embroidered with ſilver: and is call'd the goddeſs of wiſdom.

PALLET [*with painters*] is a little oval table of wood or ivory, very thin and ſmooth; on and around which the painters place the ſeveral colours they have occaſion for, ready for the pencil.

The middle ſerves to mix the colours on, and to make the teints requir'd in the work. It has no handle, but inſtead thereof, a hole at one end to put the thumb thro', to hold it by.

PALLET is the end of a ſquirrel's tail, ſpread abroad, and faſtened to a flat pencil ſtick, which is broad at one end and ſplit, much like an houſe-painter's graining tool; but much leſs.

It ſerves for taking up, and laying on whole leaves of gold or ſilver at a time, and ſerves for all the ſame uſes that cotton does with *gilders*.

PALLET *with potters crucible-makers*, is a wooden inſtrument, almoſt the only one they uſe for forming, beating and rounding their works.

They have ſeveral kinds, the largeſt are oval with a handle, others are round or hollow'd triangularly; others in manner of large knives, ſerving to cut off what is ſuperfluous on the moulds of their works.

GIACOMO PALMA *call'd* PALMA VECCHIO, born in 1508. ſtudied at *Rome*, and after inſtructed by *Titian*, liv'd at *Rome* and *Venice*, excell'd in hiſtory and portraits; died in 1556, aged forty-eight years.

GIACOMO PALMA, *jun. call'd* GIOVANE PALMA, born in the year 1544, ſcholar of his father *Antonio*, nephew of old *Palma*; and ſtudied *Titian* and *Tintoret*, liv'd at *Rome* and *Venice*; excell'd in hiſtory, died in the year 1628, aged eighty-four.

PAN was accounted by the antients, the god of the flocks of ſheep and ſhepherds; and was repreſented in the proportions of a man from the middle upwards, of a ruddy and ſanguine countenance, and very hairy body, his breaſt covered with the skin of a ſpotted *doe* or *leopard*, holding in one hand a ſhepherd's hook, and in the other a whiſtle: but from the middle downwards, having the perfect ſhape of a goat, in thighs, legs and feet.

Plato underſtood by *Pan* reaſon and knowledge: which is twofold; the one of a man and the other of a beaſt: by the upper part of *Pan*, he underſtood *truth* to be ſignified, and this accompanied with *reaſon*, which being divine, raiſes and lifts a man up to heaven; and by his lower parts, the falſeneſs, beaſtlineſs, and rudeneſs of theſe who living here in the world, are only delighted with the pleaſures and fooliſh vanities of it.

Juſtin relates, that a ſtatue of *Pan* was ſet up in a temple near the *Palatine* hill in *Rome*, appearing to view all naked, excepting that it was lightly enſhadowed and covered with a goat's-skin.

By which was intimated, that (as it was reputed in thoſe days) Pan *had his habitation among hills, woods and groves, who was indeed moſt ador'd and worſhipped by ſhepherds, as one who had the peculiar care and government of their flocks.*

Servius underſtands, that by his horns are ſignified either the beams of the ſun or new moon, at what time ſhe is horned; his red face ſignifies the element of fire; his long beard, the air; his ſpotted garment, the ſtarry firmament; his ſhepherd's hook, the rule and goverment of nature.

Dying PAPER *and* PARCHMENT.

To make marble paper. Take divers oiled colours, put them ſeverally in drops upon water, and ſtir the water lightly: then wet the paper (being of ſome thickneſs) with it, and it will be waved like marble.

To write golden letters on paper or parchment.

You may do this with vermilion ground with gum-armoniack, ground with glair of eggs, and it will be like gold.

To take out blots, or make black letters vaniſh in paper or parchment.

This may be done with *alum-water* or *aqua-fortis*, mixed with common water.

To make ſilver letters on paper or parchment.

Take tin one ounce, quickſilver two ounces, mix and melt them, and grind them with gum-water.

To write with GREEN INK.

Take *verdegreaſe*, *litharge*, *quickſilver*, of each a ſufficient quantity, grind and mingle them with urine, and it will be a glorious green like *emerald*, to write or paint with:

Or thus; grind juice of *rue* and *verdegreaſe*, and a little *ſaffron* together, and when you would write with it, mix it with gum-water.

Or thus; diſſolve *verdegreaſe* in *vinegar*, ſtrain it and then grind it in common water, and a little honey, dry it, and grind it again with gum-water, and it is done.

To write on PAPER *or* PARCHMENT *with* BLUE INK.

Grind *blue* with honey, then temper it with glair of eggs or gum-water made of iſing-glaſs.

PARCÆ *or the* DESTINIES, call'd the three *fatal ſiſters*, named *Clotho*, *Lacheſis* and *Atropos*.

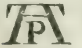
Clotho is feign'd (by poets, *&c.*) to take the charge of the birth and nativities of mortals; *Lacheſis* of all the reſt of their life; and *Atropos* of their death or departure out of this world.

They are all three painted ſitting on a row, very buſily employ'd in their ſeveral offices; the youngeſt ſiſter drawing out of a diſtaff a reaſonable big thread: the ſecond winding it about a wheel, and turning the ſame, till it becomes little and ſlender: the eldeſt (which is aged and decrepit) ſtanding ready with her knife, when it is ſpun, to cut it off.

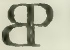
And they are deſcrib'd inveſted with white veils and little coronets on their heads, wreathed about with garlands, made of flowers of *Narciſſus*.

PARSIMONY is repreſented in painting, *&c.* by a virago modeſtly dreſſed, with a pair of compaſſes, and a purſe full of money cloſe ſhut in her hand, with a label with this motto, SERVAT IN MELIUS.

Her virile age declares her capable of reaſon and diſcretion, to join uſefulneſs with honeſty; her plain dreſs, hatred of ſuperfluous expence; the compaſſes, order and meaſure of all affairs; the purſe with the motto, that it is a greater honour to keep what one has, than to acquire or purchaſe what one has not.


AGOSTINO PARISINO, who engrav'd the 81 images deſign'd by *Florio Macchi*, found in a book intitled the emblem of *Paul Maulii*, us'd to mark his works with the preceeding mark.

GIOSEPPI PASSARI, born in the year 1654, liv'd at *Rome*, excell'd in hiſtory, died in the year 1714, aged ſixty years.


BERNARD PASSERO, an engraver of all ſubjects, us'd this mark.

BARTOLOMEO PASSEROTTO, ſcholar to *Jacopo Vignuola*, *Tad. Zucchero*, &c. liv'd at *Rome*, excell'd in hiſtory and portraits.

PASSIONS; ſays Monſ. *le Brun*, are motions of the ſoul, reſiding in the ſenſitive part thereof, which makes it purſue that which the ſoul thinks for it's good, or avoid that which it thinks hurtful to it: and for the moſt part whatſoever cauſes paſſion in the ſoul, makes ſome action in the body.

It then being allow'd that the greateſt part of the paſſions of the ſoul produce bodily actions, it is neceſſary we ſhould know what thoſe actions of the body are, which expreſs the paſſions, and what action is.

Action is nothing but the motion of ſome part; and this alteration cannot be, but by an alteration of the muſcles; and they have no motion but by the extremities of the *nerves* which paſs through them: the *nerves* do not act but by the *ſpirits*, which are contain'd in the cavities of the *brain*; and the *brain* receives the ſpirits from the blood, which paſſing continually through the *heart*, is thereby heated and rarefied in ſuch manner that it produces a certain *ſubtil air*, which aſcends up to, and fills the brain.

The brain being thus fill'd ſends back theſe ſpirits to the other parts by the *nerves*, which are ſo many channels or pipes, that convey the ſpirits into the muſcles, more or leſs, according as the action requires, in which they are employ'd.

So as that muſcle which is moſt in action receives the greateſt quantity of ſpirits, and conſequently becomes more ſwell'd than the others, which are depriv'd of them, and by ſuch privation ſeem more looſe and more waſted or ſhrunk than the others.

The antient philoſophers having given two appetites to the ſenſitive part of the ſoul; they place the ſimple and unmix'd paſſions in the concupiſcible appetite, and the wildeſt and compounded in the iraſcible appetite; the former comprehending *love*, *hatred*, *deſire*, *joy* and *grief*; and *fear*, *boldneſs*, *hope*, *deſpair* and *anger*, they ſay, have their reſidence in the latter; others add *admiration*, which they place firſt, and after that *hatred*, *deſire*, *joy* and *grief*; and from theſe they derive the others, which are compounded; as *fear*, *boldneſs*, *hope*, &c. All which, by what lines they are deſcrib'd in drawings, ſee each under its particular article, and in the engraven plates.

But if it be true, that we have one part where the ſoul more immediately exerciſes its functions, and that this part is in the *brain*; we may alſo ſay that the *face* is the part, where it more particularly makes appear what it feels.

And if the gland in the middle of the *brain*, is the place where the ſoul receives the images of the paſſions; ſo the eye-brow is the part of the face, where the paſſions are beſt diſtinguiſhed, tho' many have thought it to be in the eyes.

It is true the eye-balls, by their ſparkling and motion, ſhew the agitation of the ſoul.

The mouth alſo, and the noſe have a great ſhare in the expreſſion, (in drawing, *&c.*) but ordinarily theſe parts do but follow the motions of the heart.

And as there are two appetites in the ſenſitive part of the ſoul, in which all the paſſions are engendred; ſo there are two motions of the eye-brows, by which all the motions of ſuch paſſions are expreſs'd.

Theſe two motions have a perfect reſemblance of the two appetites, for that which ſets up towards the brain, expreſſes all the ſavage and cruel paſſions: but there is ſomething yet more particular in theſe motions; and according as the paſſions change their nature, the motion of the eye-brow changes its form: for a ſimple motion thereof expreſſes a ſimple paſſion; and if the paſſion is mix'd, the motion is ſo likewiſe. If the paſſion be gentle, ſo is the motion; and if that be violent, the motion is alſo violent.

But it is to be obſerv'd, that there are two ſorts of elevations of the eye-brows, in the one the brow is rais'd in the middle, and this elevation expreſſes pleaſant motions.

It is alſo to be obſerv'd, that when the eye-brow is rais'd in the middle, the mouth is rais'd at the corners; and in ſorrow it is rais'd in the middle.

But when the eye-brow is drawn down in the middle, it ſhews bodily pain, and has a contrary effect; the corner of the mouth being then drawn downwards.

In *laughter*, all the parts of the face go one way; for the eye-brows being drawn down towards the middle of the forehead, cauſes the mouth, noſe and eyes to follow them in the ſame motion. See the figure *laughter* in the plate.

In *weeping*, the motions are mix'd and contrary: for the ends of the eye-brows next the noſe, will be drawn down; and contrarywiſe, the ſame corners of the eyes and middle of the mouth, upwards. See the figure *weeping*.

There is another obſervation to be made, that when the heart is dejected, all the parts of the face will be caſt down.

On the contrary, if the heart feels any paſſion, whereby it is heated or hardened, all the parts of the face will partake of this paſſion, and particularly the mouth; which proves what has been already ſaid, that the mouth is the part of the face, which moſt particularly marks the motions of the heart.

For it is to be obſerv'd, when that laments, the corners of the mouth are drawn downwards; when that is pleas'd the corners of the mouth are rais'd; and when the heart has any *averſion*, the mouth is thruſt out and rais'd in the middle.

PASTES. *Obſervations for paſtes and their colours.*

The making of theſe paſtes is the eſſential point of the buſineſs; becauſe on it depends the beauty of our artificial gems: but the baking alſo is not of leſs conſequence, foraſmuch as without that you cannot ſucceed. It is not enough to well regulate the fire during the time, whilſt the matter is to ſtand in the furnace; but you muſt alſo take care that the crucibles don't break before the matter is well baked and purified: for if the crucible breaks, and you are forced to pour out the matter into another crucible, the whole work will be ſpoiled, and the matter will be full of puſtles and bliſters. You had much better let the crucible cool, if it be not quite broken; then lute it well, and put it in the furnace again to make an end of baking: you muſt alſo take notice not to break the crucible to take out the matter, before it be perfectly baked.

The curious may avoid theſe inconveniencies, if in room of ordinary crucibles, they make them of the ſame earth, that the pots for making glaſs are made of, which will reſiſt the fire longer than we have occaſion here for baking, and bear a more violent fire than we have occaſion for.

Thoſe of *Germany* alſo will do very well for this buſineſs, becauſe they endure the fire better than the ordinary ones; but I will yet abridge all theſe precautions, by ſhewing an eaſy way to prepare the common crucibles, which I have ſeen tried, and reſiſt the fire a longer time.

Take an ordinary crucible, or rather one of *Germany*: heat it a little in the fire, then dip it into olive oil, and let it ſoak a little of it in. Then take glaſs reduc'd to an impalpable powder, and ſtrew it all over the crucible, both without and within, as thick as you can, then put it into a furnace in a ſmall heat, and then increaſe the fire to a melting heat; then the glaſs will melt and vitrify ſo well with the crucible, that it will endure the fire far longer than is required for our buſineſs.

We will alſo further remark, that the colours we here ſhew for paſtes are proportionable to the doſes we give them; but thoſe who would have them deeper and lighter, muſt regulate themſelves accordingly: if they make ſmall ſtones for rings, the colour muſt be deeper, by reaſon of the ſmallneſs: if they make greater, the colour muſt be lighter, but deeper for pendants than other. The whole depends much on the fancy of the workman, who is to proportion the doſes of the colouring to the work he deſigns.

The way to make very hard PASTES *with ſulphur of* Saturn, *and to give them all the colours of precious ſtones.*

To do this; take ten pound of natural cryſtal prepared, with ſix pound of ſalt extracted from *Polverine* of *Rochetti* purified, pounded and well ſearced, whereunto add two pound of ſulphur of *Saturn* chymically prepar'd, (ſee ſulphur of *Saturn* or lead) then mix theſe three powders well together, and put them into an earthen glazed pan, and caſt on them a little common fair water, to reduce theſe powders into a lump ſomething hard: afterwards divide them into ſeveral parcels, about three ounces each, making a hole in the middle, the better to dry them at the ſun. Being well-dried, put them into an earthen pot well-luted, then calcine them through a fine ſieve; this being done, put this powder into a glaſs furnace there to melt and purify for three days; then caſt the matter into the water, as we have elſewhere ſhewn; and after you have dried it, put it again into the pot in the ſame oven, there to melt and purify for fifteen days, that it may be without ſpot, and that it becomes of the colour of precious ſtones.

The cryſtalline matter may be tinged of ſeveral colours; *viz.* emerald by means of *copper* thrice calcin'd; topaz by means of prepared *zaffer*; and ſo of others whereof we ſhall not treat here, having largely done it under their proper articles.

To ſucceed, you muſt put into the furnace, as many pots as you deſign to make different colours, add to each as much cryſtalline matter as you pleaſe, and regulate according to the weight of the tinging materials which you add to them, and proportionate them to thoſe we have deſcribed in their proper articles.

This paſte will have finer colours than the true natural ſtones, and approach near to their hardneſs, particularly that of the emerald.

PASTIL [*with painters*, &c.] a ſort of paſte made of ſeveral colours, ground up with gum-water, either together or ſeparately, in order to make *crayons* to paint with, either on paper or parchment; alſo the *crayons* themſelves, are call'd paſtils. *See* CRAYONS.

PASTIME is repreſented in painting in purple trimm'd with gold.

PATIENCE is repreſented in painting, *&c.* by a woman of mature age, ſitting on a ſtone wringing her hands, her naked feet upon thorns, a heavy yoke upon her ſhoulders.

The yoke and thorns declare this invincible virtue to endure the pains of the body, and a wounded ſpirit expreſs'd by her wringing her hands; patience ſuffers adverſity with a conſtant and quiet mind, which is nothing but an invincible virtue, declared in ſupporting the troubles of body and mind, repreſented by the thorns.

P. B. F. } Signifies *Paulus Blancus* fecit & incidit.
B. B. }

P. C. ſignifies *Paul Caliari*, i. e. *Paul Veroneſe* painter and inventor.

PEACE is repreſented in painting like a lady, holding in her right-hand a wand or rod, downwards towards the earth, over a hideous ſerpent of ſundry colours; and with her other hand covering her face with a veil, as loth to behold ſtrife or war.

PEARLS. All the antients who have treated of the ſeveral ſorts and properties of precious ſtones, have at the ſame time diſcourſed of pearls, becauſe they claim a place amongſt the firſt and beſt of jewels, in reſpect to their value as well as beauty, and the fix'd quality which they contain; they having been at all times ſought after, for the ornament and pleaſure of ladies, as they are at this day: for theſe reaſons we thought it convenient to give them a place here, that (from our experience) the curious might be informed, how to make ſuch artificially as fine and ſplendid, as thoſe which nature forms in the depth of the ocean. We avow that the production of pearls is very different from that of precious ſtones, becauſe the latter proceeds from the earth, and the former quite contrary, from the ſhell-creatures which are ſhrouded in the bottom of the ſea; theſe receive their nouriſhment from the ſame liquid ſubſtance which contributes to the growth of the ſhells, and this ſlimy ſubſtance is reſolved from the watry humour of the creature; by three ſeveral proceſſes.

The firſt dries it by degrees, the next brings it to an hardneſs, and laſt of all 'tis at certain times employ'd by the animal, for the increaſe of its ſhell, and the place where this is effected in the inmoſt inveloped receſſes thereof.

Now the firſt principle of theſe and all other precions ſtones deſcends from above, to wit, the univerſal ſeed which alone can give birth and increaſe to all the tenants of this vaſt univerſe; and theſe precious ſtones, as well as the metals, are nouriſhed in the womb of the earth: ſo the living creatures bear each other the fœtus within its parent, *&c.*

The oriental pearls are generated in the fiſh, which contains them with the mother of pearl, as the occidental or weſtern in our oyſters; but the beauty of theſe two are very different, the oriental being of a ſilver white, and exceeding ſplendid to the occidental, the beſt of theſe latter ſeldom arriving to any higher than the colour of milk.

We will not here take notice of the particular places of the *Eaſt* where they are found, but only inform you, that the beſt and moſt beautiful come from the *Perſian* gulph, about the iſle of *Ormus*, *Baſſora*, &c. they are found in *Europe*, not only in the ſea, but in rivers and freſh-water; we have them from *Scotland*, *Sileſia*, *Bohemia*, *Friſia*, *Lorrain*, &c. in all which places they are found very fine, only thoſe of *Friſia* are very ſmall.

'Tis thought the fiſh wherein the pearl is generated, becoming ſickly and weak, and not able to diſpoſe of the ſlimy moiſture for the growth of its ſhell, it remains in the body thereof and is dried.

Hence the birth of the pearl, and ſo by a continual ſupply of the like ſubſtance ſtill coating it a-new, it becomes large, juſt as a ſtone in the bladder of a man, and other creatures engenders, and is fed by a clammy humour which cannot be emitted by urine, but remains behind, and ſo hardens and becomes a ſtone: after the like manner the bezoar ſtone is bred in *Indian* goats of the kingdom of *Golconda*, and in the galls of wild boars in *India*, and the hedge-hogs of *Malacca*; ſo ſeveral other ſtones, to which they give the name of bezoar, are found in the galls of beeves, deer, goats and other animals in *France* and elſewhere, all which have great virtues in phyſick.

How great and effectual thoſe pearls are in phyſical matters, and what ſucceſſes they have there, is not to our purpoſe; we only intend to ſhew the way to imitate their beauty by art ſo finely, and with ſuch exactneſs of luſtre, as not to leave it in the power of any to diſtinguiſh them eaſily from the true and natural ones; they being made of the very fineſt ſort of paſte as can be, and the ſame ſtuff as the true ones.

Poverty and pride are two inſeparable companions amongſt the *French*: ſuch ladies as make uſe of pure pearl, are thoſe that can afford it, and the little creatures that cannot reach the price, but would however appear gay, are obliged to have recourſe to the counterfeit, and content themſelves with only the imitation of nature. 'Tis ſome years ſince the uſe of theſe latter was introduced into *France*, which now not only the puny ladies, but thoſe of birth and quality do wear; this proceeded all from that faſhion which inſenſibly reached ſtill at the larger pearls, which theſe ladies coveted for ornament, and becauſe they could not be furniſhed enough with true, they made uſe of the artificial; whence the common ſort of people received the advantage to vie with perſons of the firſt rank and quality, which they don't fail to do, without conſideration of either eſtate, or condition, but only to conform with the mode.

The counterfeit pearls, which are uſually made, are juſt the colour of the paſtes, and of no continuance but for the preſent; they are done with a compoſition of brittle wax after melted, and for colouring you uſe prepar'd mercury, mouth-glue, or any other drug to give them a brightneſs, which ſoon peals off, and ſcales away, eſpecially in the heat of ſummer. The way which we will give is not only very good and ſolid, but exceeding fine, being effected with ſeed-pearl; we grant theſe paſtes to be much dearer than the former, but conſider their fineneſs, and that they will laſt for ever; we ſhall alſo ſhew how to make the counterfeits finer and harder, and we are perſuaded that the preparation of thoſe we ſhall aſſign, will appear ſo eaſy, and yet produce ſuch fine imitations, as ſhall be very ſatisfactory.

Another way.

Take pearl three ounces, prepared ſalt one ounce, filtrated juice of lemons, ſo much as will cover them four fingers breadth: let it ſtand ſo long till it be a paſte; the glaſs being very cloſe ſtopp'd; ſhake all together five or ſix times a-day, and when it comes to paſte, put it into a glaſs with ſtrong ſpirit of vinegar; and lute another glaſs over it; digeſt it three weeks in a cool place, under the earth ſo long, till all be diſſolved; then mix it with a little oil of eggs or ſnail-water, till it be like pearl in colour: then put this paſte into ſilver moulds, and cloſe them up for eight days; after which take them out and bore them, and put them again into the mould for eight days. This done, boil them in a ſilver porringer with milk: laſtly, dry them upon a plate in a warm place, where neither wind nor duſt may come, and they will be much fairer than any oriental pearl.

To whiten pearls.

Take common roch-alum one pound, *Solomon's* ſeal, two ounces, camphire half an ounce, diſtil them from a clear water, and rectify it and uſe it with a fine ſoft linnen cloth.

Or thus, which is better. Take white ſalt one pound, conſound water, alcohol of wine, of each 12 ounces; lime, eggs, of each one ounce; bean-flower half an ounce, mix and diſtill them: or thus, waſh them in a lixivium of burnt tartar, and keep them on a warm ſtove.

The deſcription of the furnace, for making Pearls. See the Plate.

A is the aſh-hole: you may add to it an hovel for ſucking in the air, which muſt be luted to it very firmly.

B is the inſide where the aſhes fall into, this ought to be lofty, for drawing in the air.

C is the grate, which muſt be very ſtrong iron-bars.

D is the opening, through which the crucibles and fuel is put in; this ought to be well tempered iron, and luted with a very good lute, at leaſt three inches thick.

E is the chamber where the works are baked.

F is the coverlid of the furnace, which is to be vaulted firm, and made of the ſame earth.

G is the chimney, over which you may ſet ſeveral iron plates one above the other for drawing the air.

H is the hovel or ſhelving-place of iron for the aſh-hole.

I are funnels for the chimney-plates and the hovel.

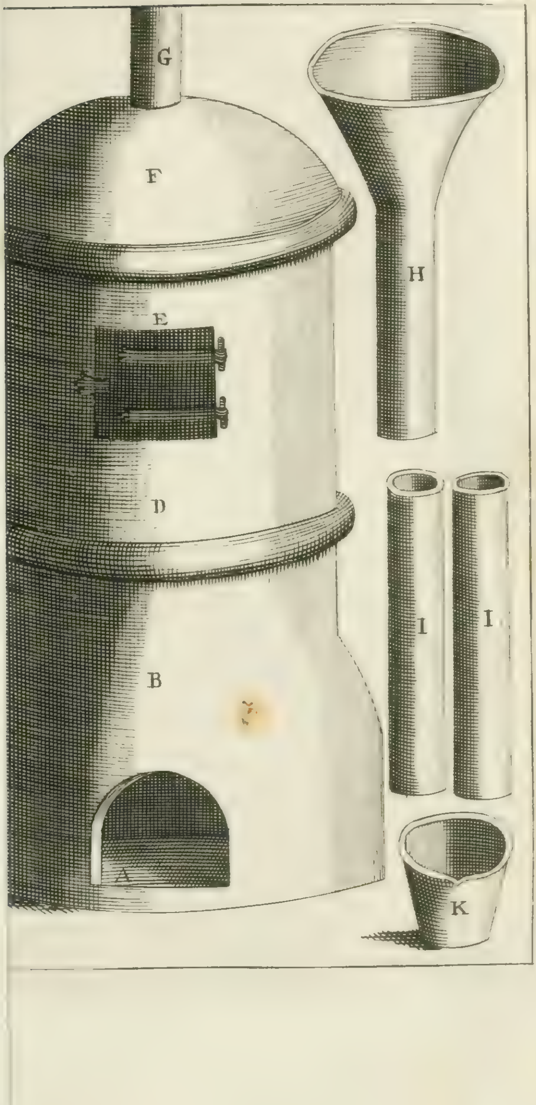
K is a crucible.

If this furnace be made five or ſix inches thick, it will bear all degrees of heat, and ſerve very conveniently for private perſons, by making it of a ſuitable largeneſs inſtead of the glaſs-houſe furnace: when you make your fire of wood, there will be no occaſion of the hovel of the aſh-hole.

But to go on with our pearl.

You muſt take two pound of thrice diſtilled vinegar, one pound of *Venice* turpentine, mix them together, and ſo put the maſs into a glaſs cucurbit, fit to it the head and receiver, luting the joints, let them dry, and ſo ſet it on a ſand-furnace to diſtil the vinegar; keeping a gentle heat, leſt the ſtuff ſhould ſwell up.

Afterwards put the vinegar into another glaſs cucurbit, wherein you muſt hang a quantity at diſcretion, of ſeed-pearl, ſtrung on a thread of ſilver or gold, done about with a piece of very thin ſilk; the hand muſt be put in the middle of the body, ſo as not to touch the vinegar. This done, head your cucurbit with a blind head, and lute it very well, ſet it in a *Balneum Mariæ* well-cloſed; there to remain for a fortnight, the heat of the *B.* will elevate the fumes of your vinegar, and they will con-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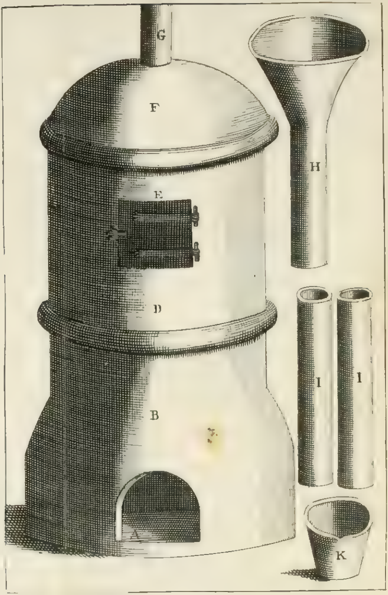
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continually circulate about the pearl, and ſo ſoften and bring them to the conſiſtence of a paſte; which being once performed take them off, and mould them in what form you pleaſe, long, round and pear-like, and as big as you think fit, do this with moulds of fine plate gilded; you muſt not touch the paſte at all with your hands, but altogether work it with a plate ſpatula, which will fill the moulds, then bore them through with a porker's briſtle or gold wire, and ſo let them dry a little, then thread them again with gold wire, and ſet them in a cloſed glaſs, which lay in the ſun to dry them to a hardneſs; ſet them afterwards in a glaſs matraſs in a ſtream of running-water, leaving it there for twenty days, and about that time they aſſume their firſt ſolidity and hardneſs.

To give them tranſparency and ſplendor, you muſt prepare ſome mercury-water after the rate we ſhall preſcribe hereafter.

When you have taken them out of the laſt matraſs wherein they were for twenty days as the running water, hang them in a veſſel of glaſs where the mercury-water is, and ſo they will moiſten and ſwell, and aſſume their oriental beauty: this done, ſhift them out of this water into a matraſs cloſed hermetically, for fear that any water ſhould be admitted into it, and ſo down with it into a well, leaving it there for eight whole days; then draw it up, open the matraſs, and you'll have them as fine and good as any oriental pearls whatever.

This method is a little long, but withal it is effectual and ſure; however it is not thus the philoſophers, or virtuoſi work, for they have another way much ſhorter, having regard only to ſpirit: nor have I experience enough in their matters to make a diſcovery thereof; and if I had, it could not be done without diſobliging them irreconcilably: therefore take what I have delivered on this important ſubject in good part; and be aſſured, that if you were acquainted with that ſecret which they ſo cloſely reſerve, there could be nothing done more by it, as to goodneſs and beauty in this work, than by our preſcribed method, which is very eſtimable, and more precious than you'll imagine; whereof I can aſſign you no better, or other argument, than experience to convince you.

To make mercury-water, for giving tranſparency and ſplendor to pearls.

Having promis'd this ſecret of making mercury-water, to compleat the tranſparency and natural luſtre to pearls, which is a matter ſo highly valuable, that a very conſiderable ſum has been offered in our preſence, for the diſcovery thereof to a certain perſon; yet we are free that experience ſhould have its due courſe of informing the ignorant, and ſhall for our part generouſly acquit our engagement.

You muſt take plate-tin of *Cornwal* calcined, let the calx be very fine and pure, amalgamate one ounce thereof, with 12 ounces of prepared mercury well purified, waſh the amalgama with water, until the water remains clear and inſipid, then drying the amalgama thoroughly, put it into a matraſs over a furnace, keeping ſuch a degree of heat as is required for ſublimation. When the matter is well ſublimated, take off the matraſs and let it cool, and ſo take out the ſublimate, to which add one ounce of *Venice* ſublimate, and grind them well together on a marble, ſo put them into another matraſs, cloſe it very well and ſet it topſy-turvy in a pail of water, and the whole maſs will in little time reſolve itſelf into mercury-water: this done, filter it into a glaſs-receiver, and ſet it on a gentle aſh-fire to coagulate, and it will be brought to a cryſtalline maſs. Take it off, and with a glaſs peſtle and mortar pound it very well to a very fine powder, which ſearce thorough a very fine ſieve, and put it into a well ſtop'd matraſs in *B. mariæ*, letting it remain till it reſolve again in water, and this laſt ſhall be the mercury-water, which you muſt preſerve to employ on your pearl.

Another way to make theſe pearls.

This is an eaſier way than the former; for by baking them, (as we ſhall ſhew) you very much ſhorten the time which the preparation would elſe take up: however, you muſt not expect them ſo delicate and natural as the firſt, the cauſe whereof is eaſy enough conceived; for theſe pearls having enlarged themſelves in the water, as we already noted, 'tis reaſonable to believe the hardening them afterwards in the cold will be of a much more natural effect than if done with heat.

Take very fair oriental pearl-ſeed for this purpoſe, and reduce it to an impalpable powder on a marble, to diſſolve afterwards in mercury-water or clarified juice of lemons: if this be not effected quick enough, ſet it in a cucurbit over warm aſhes, and be careful to take the cream (which in a little time will appear at the top) immediately off; ſo withdraw the diſſolution from the fire and let it ſettle a little. This done, pour it gently into another glaſs-body and keep it a-part, and you'll have the pearl in a paſte at bottom, with which fill your gilded plate-moulds, made to what bigneſs or form you think fit, preſſing the paſte with the ſilver ſpatula, and ſo ſhut them up. 24 hours after you muſt take and bore them through with a porker's briſtle, cloſe up the moulds and leave them in the oven in a paſte of barley-dough, which being half baked, draw out and open, taking away all the pearl, and ſteep them in the diſſolution juſt before directed, to be kept apart, putting them in and out ſeveral times, ſo cloſe them in their moulds, and bake them again with the like paſte as before; only let this laſt be almoſt burnt up before you draw it out, thus you'll have the pearl well baked and hardned.

This done, draw it out, open all the moulds, take away the pearls and ſtring them on one or more gold or ſilver threads, ſteep them in mercury-water for about a fortnight, after this dry them in the ſun in a well-cloſed glaſs body, ſo you'll have a very fine and ſplendid pearl.

Another way.

Tho' this be a more common way than the precedent, we will not omit it, becauſe every one may have his choice to take that method which beſt ſuits with his apprehenſion or conveniency.

You muſt, as in the former, take very fair oriental ſeed-pearl ground to an impalpable powder and diſſolve it in alum-water, then rack off that water, and waſh off the paſte of pearl which remains at bottom, firſt with ſome diſtilled waters, then in bean-water, and ſet it in B. *Mariæ* or horſe-dung to digeſt for a fortnight, afterwards take out your veſſel, and your matter being come to the conſiſtency of a paſte, mould up your paſte in the gilt ſilver moulds as before directed, bore them with a briſtle, ſtring them on gold or ſilver thread, and hang them in a very well clos'd limbeck of glaſs, to prevent the air from coming in to ſpoil them.

Thus dried, lap them one by one in leaves of ſilver, and ſplit open a barbel as if you were to fry him, and ſo cloſe them all up in his body; make a paſte of barley-meal, and bake him as you would do a batch of bread and no more, afterwards draw it out, and let them dry.

To give a tranſparency and ſplendor to theſe pearls, if you don't care to uſe the mercury-water, inſtead thereof, take the herb Gratuli ſqueez'd in water, put into this water ſix ounces of ſeed-pearl, one ounce of ſalt-petre, an ounce of roach-alum, an ounce of litharge of ſilver, the whole being diſſolved; take your dried pearls, heat them firſt, then cool them in this diſſolution, thus do for about ſix times at leaſt, heating and cooling them at this rate therein.

If your pearl ſhould happen to fail of coming to a ſufficient hardneſs, you may correct and make them exceeding hard, by baking them a ſecond time after this manner.

Take two ounces of calamine, or lapis calaminaris in impalpable powder, add to this two ounces of oil of vitriol, and two ounces of water of white of eggs, put all theſe into a retort, lute thereto a receiver, and let them diſtil, and you'll have from it a very fair water, with which and ſome fine barley-meal make a paſte; coffin your pearls in this, and bake them in an oven as before, they will thus become exceeding hard, and recover their natural tranſparency.

How to blanch fine pearl.

The beauty of pearl conſiſts intirely in the brightneſs of their white colour, ſuch as are ſpotted or of a dark yellow being the leaſt eſtimable: you may however reſtore theſe laſt to a true luſtre and whiteneſs, by letting them ſoak and cleanſe firſt with bran-water, then in milk warm water, and laſtly ſteep them 24 hours in mercury-water; this done, ſtring and hang them in a well-clos'd glaſs body to dry in the ſun as before.

The bran-water is made by boiling two good handfuls of wheaten bran in a quart of water, until the water has drawn all the ſtrength thereof to it; and thus you are to uſe it afterwards for cleanſing the pearl. You muſt ſtring and lay them all together in a glaz'd earthen pan, and pour thereon one third of this water; when they have ſoaked until the water be tolerably cool'd that you may indure the heat, rub them with your hands gently to cleanſe them the better; continue ſo, until the water be cold, pour out this water, and pour on another third part of the bran-water, ſtill boiling and ſo uſe as the former, throwing it away when cold, then pouring on the remainder of the water, proceeding ſtill after the former manner; after this, juſt heat ſome fair water, and pour it on them to refreſh and take away the remains of bran, ſhift this water, pouring on more freſh warm water, do thus thrice without handling them, then lay them on a ſheet of very clean white paper to dry in a ſhade, and laſt of all ſteep them in your mercury-water, to bring them to perfection.

To make counterfeit pearl very like the natural.

This receipt for making counterfeit pearl, has a much more fine and ſolid effect than any now-a-days in uſe.

Take chalk well purified and ſeparated from its groſſneſs and ſand, make paſte thereof, and ſo mould it up like pearl in a mould for that purpoſe, pierce theſe through with a briſtle, and let them afterwards dry before the ſun, or for more diſpatch in an oven till they receive a juſt hardneſs; then ſtring them on a very fine thread of ſilver, colour them lightly over with bole armoniack, diluted in water of white of eggs, then drench them with a pencil and fair water, and ſo apply leaf-ſilver all over and let them dry; this done, burniſh them with a wolf's tooth till they ſhine very finely.

To give them a true colour of pearl, make a glue of parchment or rather vellum ſhavings, thus.

Waſh the ſhavings in warm water very well, and boil them after in a new pot to a thickneſs, and ſtrain this.

When you uſe this glue, you muſt warm it on a flat veſſel, then dip the ſtring of pearls therein, ſo as not to fill the interval inches between each pearl, but that every one may be done all over equally; after this, let them dry. If you obſerve any baulk or defect on them, you may dip them in a ſecond time, and they'll aſſume a finer and more tranſparent whiteneſs, and will have a certain darkneſs within and luſtre on the outſide, which compleats and brings them to the beauty of fine real pearls. But in this laſt caſe, if inſtead of this glue, you dip or varniſh the pearls after they are ſilvered, with a white varniſh, and ſo poliſh them, they will not only be fairer, but more durable like true pearl.

PEARLS are imitated [in *painting in miniature*,] by laying on a mixture of *white* and a *little blue*, and ſhading them and ſwelling them with the ſame; but a little ſtronger.

Lay on a ſmall white ſpot, juſt in the middle of the light ſide, and on the other, between the ſhade and the border of the pearl, give a touch of *maſticot*, to make a reflection; and underneath give them a caſt of the colour they are upon.

To dye woollen a PEARL *colour.*

For one pound of ſtuff, take one ounce of *blue lac*, half an ounce of *blue wood*, and half an ounce of burnt *alum*.

Firſt boil the *blue wood* for a quarter of an hour in a bag, then take it out, and having powdered and ſifted the *lac* through a hair ſieve, skim the liquor, and ſtir it very well for a quarter of an hour, and help it with a quarter of an ounce of *pot-aſhes*.

To dye SILK *a pearl-colour.*

To every pound of ſilk, take one ounce of *Orleans*, diſſolve it in water, and wave the dry ſilk in it till it lathers; but it muſt not boil; then rinſe and beat the ſilk clean, and take for every pound of ſilk four pound of wild ſaffron very well preſs'd, and four ounces of pot-aſhes, with half a pint of lime-juice. The *Italian* carnation or fleſh-colour is prepared the ſame way.

Another.

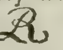
Take a clean veſſel, put fair water into it, and for every pound of ſilk, take a quarter of a pound of ſoap, and boil the ſilk in it for two hours, then pour ſome rain-water in a veſſel, to which add a bowl-full of the blue lye; or if that be too much, you may uſe half the quantity only at pleaſure, then rinſe out the ſilk and dry it.

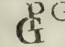
THOMAS PEMBROKE was both a hiſtory and face-painter, and diſciple of *Laroon*, whoſe manner he imitated; he painted ſeveral pictures for the Earl of *Bath*, in conjunction with one Mr. *Woodfield* a diſciple of *Fuller*, and lately living.

He died in *London* in the 28th year of his age, and about 50 years ſince.

JACOB PEN was a *Dutch* hiſtory-painter in the reign of King *Charles* II. He was excellent both in drawing, colouring and compoſition, and died in *London* about 30 years ago.

PENITENCE is repreſented in *painting* by a woman in a vile, ragged and baſe attire, infinitely deploring her being; and bemoaning herſelf in paſſionate fits above all meaſure, continually weeping.


LUCA PENNI ROMANO or *Luca* P. R. was *Raphael Urbin*'s ſcholar, and brother to *Fattorino*; he invented very beautiful ſubjects, which were engraven by *George Ghiſſi* of *Mantua*, in 1566. He us'd this mark.


GEORGE PENS painter and engraver at *Norimberg*, together with *Mark-Anthony Raimondi*, engrav'd the works of *Raphael* in *Rome*. He engrav'd after *Aldograft*'s manner, his mark was ſometimes G. P. 1554.

PENSIVENESS is repreſented [*in painting*, &c.] by an old woman full of grief, in pitiful clothes without ornament, ſitting upon a ſtone; her elbow upon her knees, and both hands under her chin; a tree by her without leaves.

Old, becauſe youth is jovial; ſhe is poorly clad, which ſuits with the tree without leaves; the ſtone ſhews that ſhe is barren in words and deeds: but though ſhe ſeems liſtleſs in the winter in politick actions; yet in the ſpring, when there is need of wiſe men, then penſive men are found by experience to be judicious.

PERFECTION is repreſented [*in painting*, &c.] by a fair lady in a veſt of gold gauſe, her boſom unveiled, her body is in the *Zodiac*, her ſleeves turn'd up to her elbows, making a perfect circle with the left.

The golden robe denotes perfection; the naked breaſts, the chiefeſt part thereof to nouriſh others; the circle, the moſt perfect figure in the mathematicks.

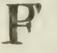
PERIDORE is a precious ſtone, a ſort of a clear *Topaz*, of a gold-colour light, but which is notwithſtanding beautiful.

To imitate it well, take two ounces of natural cryſtal in powder, 6 ounces of *minium*, an ounce of fine ſalt of *tartar*, and eight grains of *verdegreaſe*; reduce the whole to an impalpable powder, by pounding in a mortar, ſearce it through a fine ſieve. The ſame circumſtances are to be obſerv'd in baking this ſtone as in the *Jacynth*, (which ſee) by reaſon of the *minium* that enters into the compoſition of the one and the other, and you will have a very fine *Peridore*.

Another colour of Peridore.

This *peridore* ought to be harder and more fix'd than the precedent, becauſe there is no *minium* in it; but it will not be ſo vivacious.

Take one ounce of natural cryſtal in powder, a dram of *ſalt of vitriol*, two drams of *vitriol* calcin'd *ad rubedinem*, four grains of *verdegreaſe*, and as much fine *ſalt of tartar* as equals the whole in weight, *i. e.* one ounce, three drams and four grains; reduce all to a fine powder, by pounding them in a braſs mortar, mix them well together, put them into a crucible covered with another, and well luted; 12 hours after, take your crucible and break it to take out the matter, which cut and poliſh at the wheel, and let it be wrought by a good workman.



FRANCIS PERRIER painter and engraver, publiſh'd ſeveral *Roman* antiquities in 1635, with this mark, as in the Index of *Roſſi*'s plates.

PERSECUTION is repreſented [*in painting*, &c.] by a woman clad in *verdegreaſe*, and ruſt-colours, wings upon her ſhoulders; in a poſture as if ſhe would let fly an arrow; with a crocodile at her feet.

The wings ſhew its being evermore ready and quick in doing miſchief; the bow her ſending out bitter words; the crocodile becauſe it annoys only the fiſh that flee from it; ſo perſecution deſires nothing more than to find thoſe who do not reſiſt it by their own ſtrength.

Of PERSPECTIVE *in general.*

1. Is that by which we behold, contemplate and draw the likeneſs of all magnitudes, juſt in form and manner as they appear to the eye.

2. The matter to be ſeen or ſpeculated is a magnitude: the manner of ſpeculation is by radiations of light, either direct, rectified or broken.

3. A magnitude is that which hath form; and it is either lineal, ſuperficial or ſolid; that is, either a complication of points, a complication of lines, or a complication of ſuperficies.

4. A line is a complication of points; that is (according to *Euclid*) a length only without either breadth or thickneſs.

5. A ſuperficies is a complication of line, that is, a length having breadth without thickneſs.

For as the continuation of points makes a line; ſo the couching together of lines makes a ſuperficies; which is only the laying croſs-wiſe.

6. A ſolid is a complication of ſuperficies, that is a length or breadth having depth or thickneſs.

And indeed it is nothing but the continuation of points, upon a ſuperficies either perpendicularly or bending.

7. The contemplation of the object repreſents the matter to the mind, in the ſame manner as its outward appearance doth to the eye.

And from hence comes judgment, whereby the artiſt is enabled to deſcribe the ſame in lines, and delineate it according to the apparent or viſual proportions.

8. To draw or deſcribe the appearance in lines, is the active part of this art; whereby the idea conceiv'd in mind (by ſight and contemplation) is brought to light.

9. A radiation is a beam of light, conveying the likeneſs of the thing to the eyes or ſight; and the knowledge of it, to the mind or underſtanding.

And this radiation is two-fold, either external, from the external light, or intellectual from its being and power.

10. Direct radiations are thoſe, which conſider the direct or ſtreight beams, which paſs between the eye and the object.

And this is the firſt kind of perſpective; and is frequently alone call'd Opticks.

11. *Reflected radiations*, are thoſe which conſider the reflection of beams and their ſhape upon any poliſh'd body, as on a *Globe*, *Cone*, *Cylinder*, *Pyramid*, or any regular ſolid.

And this is the ſecond kind of perſpective; which is call'd Catoptricks.

12. *Broken radiations*, are thoſe which conſider the breaking of the beams, as they are to be ſeen through a glaſs or a cryſtal, cut into ſeveral planes or ſuperficies.

And this is the third and laſt kind of perſpective; which is call'd Dioptricks.

The general practice of PERSPECTIVE.

1. Let every line which in the object or geometrical figure, is ſtraight, perpendicular or parallel to its baſe, be ſo alſo in its ſcenographick delineation.

2. Let the lines which in the object return at right angles from the fore-right ſide, be drawn ſcenographically from the viſual point.

3. Let all ſtrait lines, which in the object return from the fore-right ſide, run in a ſcenographick figure into the horizontal line.

4. Let the object you intend to delineate, ſtanding on your right-hand, be plac'd alſo on the right-hand of the viſual point; and that on the left-hand, on the left-hand on the ſame point; and that which is juſt before in the middle of it.

5. Let thoſe lines which are (in the object) equidiſtant to the returning line, be drawn in the ſcenographick figure, from that point found in the horizon.

6. In ſetting off the altitude of columns, pedeſtals and the like, meaſure the height from the baſe line upward, in the front or fore-right ſide; and a viſual ray down that point in the front ſhall limit the altitude of the column or pillar, all

the way behind the fore-right ſide, or orthographick appearance, even to the viſual point.

This rule you muſt obſerve in all figures, as well where there is a front or fore-right ſide, as where there is none.

7. In delineating ovals, circles, arches, croſſes, ſpirals and croſs arches, or any other figure in the roof of any room, firſt draw ichnographically, and ſo with perpendiculars from the moſt eminent points thereof, carry it up unto the ceiling; from which ſeveral points carry on the figure.

8. The centre in any ſcenographick regular figure, is found by drawing croſs lines from oppoſite angles: for the point where the diagonals croſs, is the centre.

9. A ground plane of ſquares is alike, both above and below the horizontal line; only the more it is diſtant above or beneath the horizon, the ſquares will be ſo much the larger or wider.

10. In drawing a perſpective figure, where many lines come together, you may for the directing of your eye, draw the diagonals in *red*; the viſual lines in *black*; the perpendiculars in *green*, or other different colour, from that which you intend the figure ſhall be of.

11. Having conſidered the height, diſtance and poſition of the figure, and drawn it accordingly, with ſide or angle againſt the baſe; raiſe perpendiculars from the ſeveral angles or deſigned points from the figure to the baſe, and transfer the length of each perpendicular, from the place where it touches the baſe, to the baſe on the ſide oppoſite to the point of diſtance; ſo will the diametrals drawn to the perpendiculars in the baſe by interſection with the diagonals, drawn to the ſeveral tranſferred diſtances, give the angles of the figures, and ſo lines drawn from point to point will circumſcribe the ſcenographick figure.

12. If in landſkip there be any ſtanding-waters, as rivers, ponds and the like; place the horizontal line level with the fartheſt ſight or appearance of it.

13. If there be any houſes or the like in the picture, conſider their poſition, that you may find from what point in the horizontal lines to draw the front and ſides thereof.

14. In deſcribing things at a great diſtance, obſerve the proportion (both in magnitude and diſtance) in draught, which appears from the object to the eye.

15. In colouring and ſhadowing of every thing, you muſt do the ſame in your picture, which you obſerve with your eye, eſpecially in objects lying near; but acccording as the diſtance grows greater and greater, ſo the colours muſt be fainter and fainter, till at laſt they loſe themſelves in a darkiſh sky-colour.

16. The *Catoptricks* are beſt ſeen in a common looking-glaſs, or other poliſh'd matter; where, if the glaſs be exactly flat, the object is exactly like its original; but if the glaſs be not flat, the reſemblance alters from the original; and that more or leſs, according as the glaſs differs from an exact plane.

17. In drawing *Catoptrick* figures, the ſurface of the glaſs is to be conſidered, upon which you mean to have the reflection: for which you muſt make a particular *ichnographical* draught or projection; which on the glaſs muſt appear to be a plain full of ſquares, on which projection transfer what ſhall be drawn on a plane, divided into the ſame number of like ſquares; where tho' the draught may appear very confus'd, yet the reflection of it on the glaſs will be very regular, proportional and regularly compos'd.

18. The *Dioptrick* or broken beam may be ſeen in a tube through a cryſtal or glaſs, which hath its ſurface cut into many others, whereby the rays of the object are broken.

For to the flat of the cryſtal or water, the rays run ſtreight; but then they break and make an angle, the which alſo by the refracted beams is made and continued on the other ſide of the ſame flat.

19. When theſe faces on a cryſtal are return'd towards a plane plac'd directly before it, they ſeparate themſelves at a good diſtance on the plane; becauſe they are all directed to various far diſtant places of the ſame.

20. But for the aſſigning to each of them a place on the ſame plane, no geometrick rule is yet invented.

Of the uſes of PERSPECTIVE.

1. *Perſpective* then is a ſcience or rather an art abſolutely neceſſary to one who would *draw* well, *engrave*, *etch*, *carve* or *paint*; and which men of thoſe profeſſions ought not to want: yet they are not to be ſo wholly ſubject to its precepts, as to enſlave theſe arts to its rules.

2. It is to be us'd, when it leads you pleaſingly into the beauties of your work, and can be helpful to you in your deſign; but when it will not be uſeful to theſe purpoſes, you are to paſs it by, leſt it ſhould miſguide you, by leading you to ſomething that is repugnant to your peculiar art.

3. *Perſpective* cannot of itſelf be call'd a certain rule, but it is to be us'd with judgment, prudence and diſcretion; for if it be perfectly underſtood by you, and yet you uſe it too regularly, tho' you may effect ſuch things as are within the rules of art, yet the work will not always be pleaſing to the ſight.

4. The greateſt painters who have made uſe of it, if they had rigorouſly obſerv'd it in their deſigns, they had much diminiſh'd the glory to which they attain'd, and to which time will give a kind of immortality.

Fig. 3.

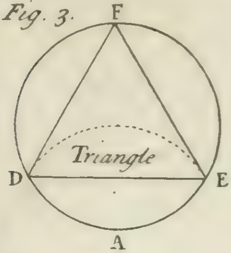
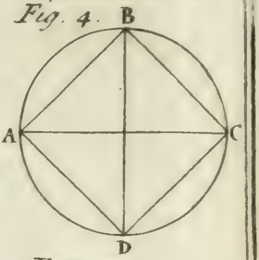


Fig. 4.



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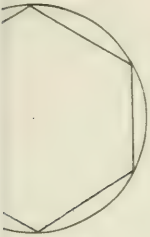
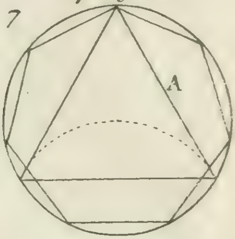


Fig. 7

Eptagone



neagone

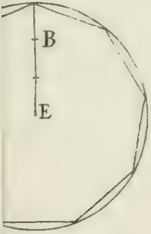
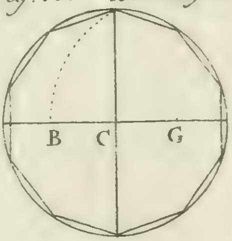


Fig. 10. A Decagone



rdecagone

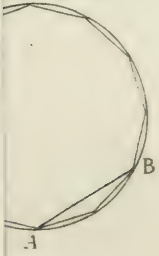
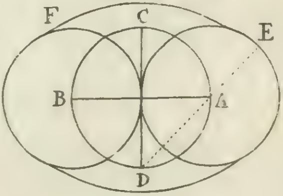


Fig. 13.



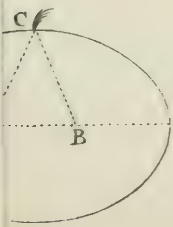


Fig. 16.

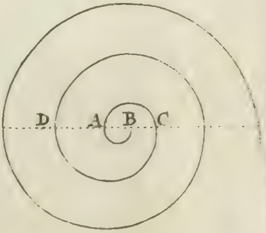


Fig 1 Square

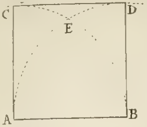
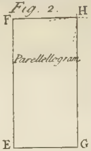


Fig. 2.



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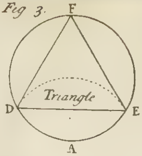


Fig 4.

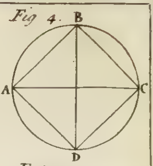


Fig. 5 Pentagone

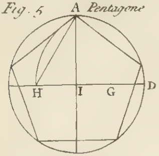


Fig 6 Exagone

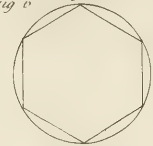


Fig 7 Eptagone

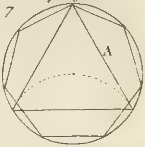


Fig 8. Octagone

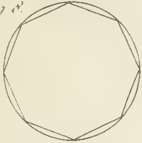


Fig 9 Enneagone

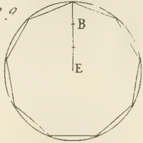


Fig 10. Decagone

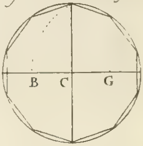


Fig. 11 Endecagone

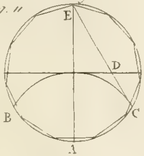


Fig. 12. Dodecagone

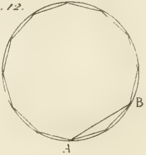


Fig 13

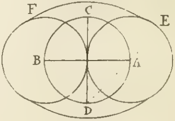


Fig 14

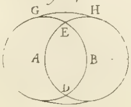


Fig 15.

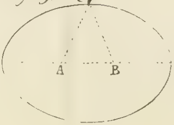
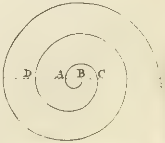


Fig. 16.



5. Such as follow its precepts too cloſely, may indeed make things regularly true; but will be very deficient in that harmonious excellency, that exquiſite beauty and that charming ſweetneſs, which would otherwiſe have been found in them.

6. The architects and ſtatuaries of antient times did not always find it to their purpoſe; it was not their prudence to trace the *geometrical* part ſo exactly as the rules of perſpective do require.

7. If you would imitate the frontiſpiece of the ***Rotunda***, according to the rules of perſpective, you would err very much; for the columns which are at the extremities have more in diameter, than thoſe that are in the middle.

8. The corniſh of the *Palazzo Farneſe* which looks ſo beautifully, if beheld from below, yet being more nearly view'd, is found to want very much of its juſt proportion.

9. In the *Pillar of Trajan*, the higheſt figures are much greater, than thoſe which are below; which by the rules of *perſpective* ſhould be quite contrary: here they increaſe according to the meaſure of their diſtance.

10. There is a rule which teaches the making figures after that manner; but it is no rule in *perſpective*; tho' it is found in ſome books of that art; and it is never to be made uſe of, but when it is for your purpoſe: *viz.* when it may eaſe the ſight, and render the object more agreeable.

11. The *Farneſean Hercules*, its baſe is not on the level, but on an eaſy declivity on the advanc'd part; the reaſon of which, is, that the feet of the figure may not be hidden from the ſight, but appear more pleaſing to the eye.

12. And this is the true reaſon, that theſe great men have ſometimes ſtept aſide from the geometrical rules of *perſpective*, not in ſlight or contempt of the art; but for the abſolute pleaſing of the ſenſe of ſight.

Methods of deſcribing geometrically figures neceſſary in PERSPECTIVE.

1. A line, as A B fig. 1. *being given to form a ſquare on*; ſet one foot of the compaſſes in the point A, and extending the other the length A B, deſcribe the arch B C; then from the point B deſcribe another arch A D, interſecting the former in E, and from E ſet off half the arch E A or E B outwardly, to D and C, to which points drawing lines from A B, *&c.* the ſquare is formed.

Or thus; Upon the given line A B, erect a perpendicular A C equal to A B, then taking the length A B in the compaſſes, ſet one foot in B, and with the other deſcribe an arch: having done the like from the point C, the interſection of the two arches will be the point D, which gives the ſquare A B C D.

2. *To deſcribe a Parallelogram* or long ſquare: on the term E of the given line E F erect a perpendicular, either greater or leſs than the ſame as E G: then taking E G in the compaſſes, ſet one foot in F, and with the other deſcribe an arch; alſo take E F in the compaſſes, and ſetting one foot in G, deſcribe a ſecond arch, cutting the former in H: this will produce the parallelogram requir'd.

Of circular polygons, which are figures of ſeveral angles inſcrib'd in circles.

3. *To deſcribe an equilateral triangle.* Open the compaſſes to the radius of the circle, ſet one foot in the point A, and deſcribe the arch D E, and draw a right line D E, which will be the ſide of the triangle D E F.

4. *For a ſquare*; draw two diameters at right angles, and join their extremes: thus you will have the ſquare A B C D.

5. *For a pentagon or five-angle*; draw two diameters, and take D G, half the ſemi-diameter D I, and from the point G with the interval G A, deſcribe the arch A H: the chord of which is the ſide of the pentagon.

6. *For the hexagon or ſix-angle*; the ſemi-diameter is the ſide of the hexagon.

7. *For the heptagon or ſeven-angle*; take half a ſide of the equilateral triangle.

8. *For the octogon or eight-angle*; take half a quadrant of the circle.

9. *For the enneagon or nine-angle*; take two thirds of the ſemi-diameter for the ſide, as E B.

10. *For the decagon or ten-angle*; divide the ſemi-diameter into two in the point G, and from G with the interval G A, deſcribe an arch A B: the part of the diameter B C, will be the ſide of the decagon.

11. *For the un-decagon or eleven-angle*; draw two diameters at right angles, and from the point A, with the interval of a ſemi-diameter deſcribe an arch B C; then from the point of interſection C, draw a line to E, and the portion C D will be the ſide of the un-decagon.

12. *For the do-decagon or twelve-angle*; divide the arch of a hexagon A B into two equal parts; and the chord of the moiety will be the ſide.

13. *An Oval* is form'd divers ways, in all which the figure is either a compound of ſeveral portions of circles, or it is one line drawn from two centres. The moſt uſual methods are theſe: firſt deſcribe a circle and draw two diameters in it as A B, C D; then from the points A, B, draw two other circles equal with the firſt; then from the point D, draw a line through the center of the laſt circle to the circumference E.

Plate X. Vol. II.

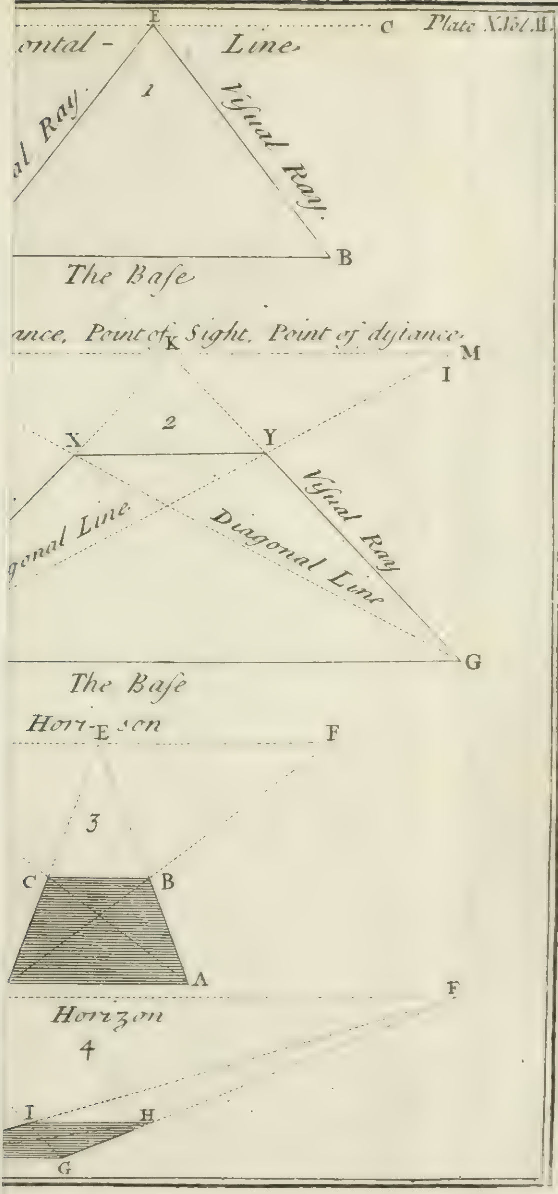
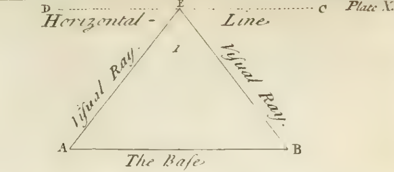


Plate X. Vol. II.

1



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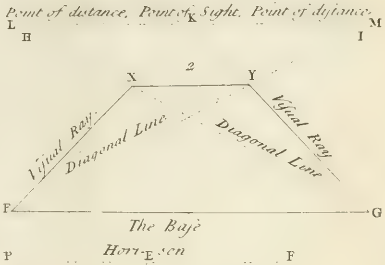

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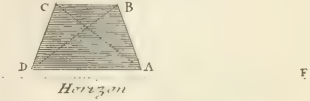

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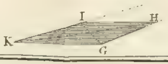


Fig. 1.

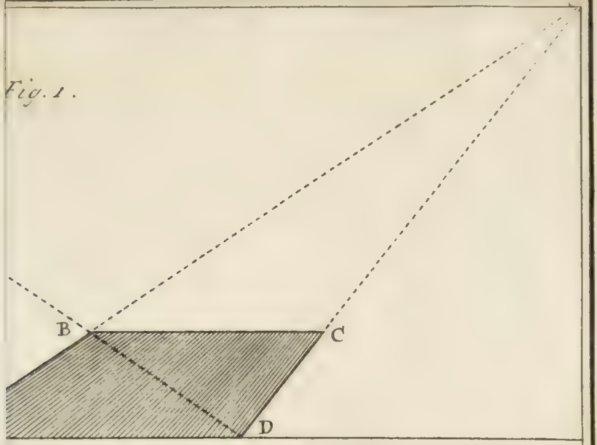


Fig. 2.

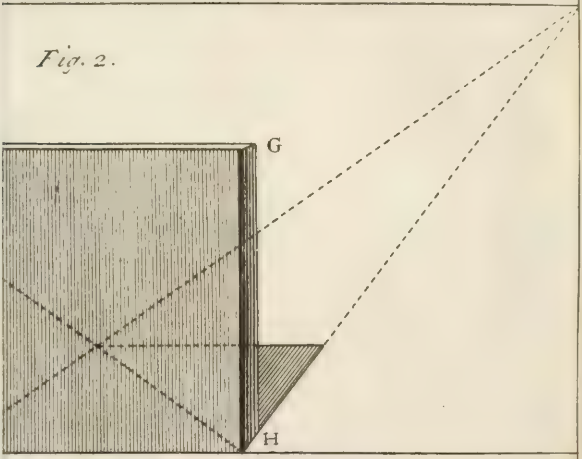


Fig. 3.

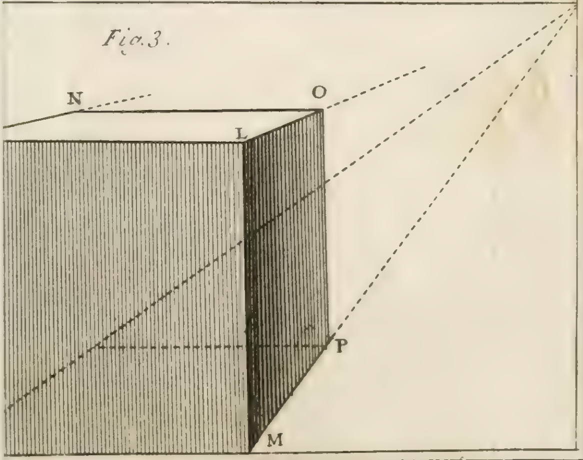


Fig. 1.

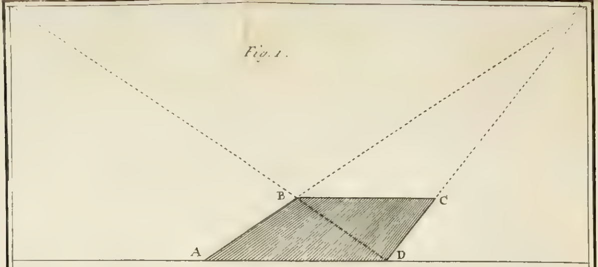


Fig. 2.

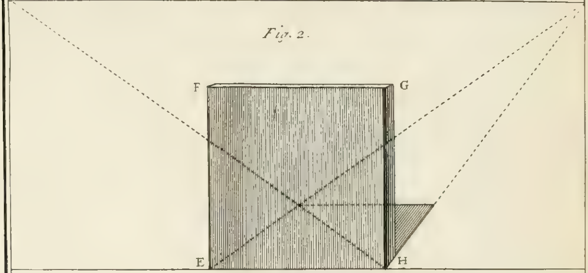
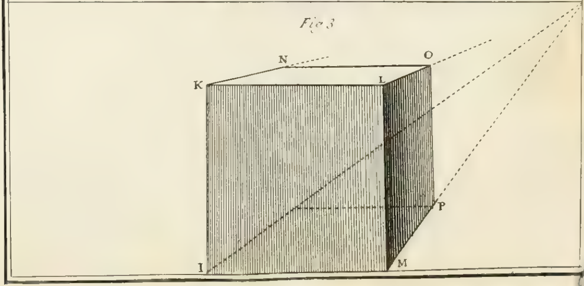


Fig 3



When you have done this, ſet one foot of the compaſſes in D, and with the other take the interval E, and deſcribe the arch E F, and doing the like on the other ſide, the oval will be formed.

14. *For a rounder oval*, draw a ſingle line, and from A, as a centre, deſcribe a circle, the interſection of which with the right line in the point B, will be the centre of another circle. Then to form the oval, take in the compaſſes the whole diameter of one of the circles, as from A to F; and in one of the interſections of the circles, as D, ſetting one foot of the compaſſes, with the other draw the arch G H: do the like from the point E.

15. There is alſo an eaſier and more uſeful manner of deſcribing ovals, than any of the preceding ones: the ſame rule ſerving for all forms, long, and narrow, broad, ſhort, *&c.*

Thus, ſet two nails or pins in a right line, A B, to ſerve as a centre, and about theſe tie a thread of the length and width of the oval required, as A B C; hold the thread tight with a pen or pencil, and turn it about till you arrive where you began. If you would have it a long one, ſet the centre farther apart; and if a ſhort one, do the contrary: for if the nails ſtand cloſe together, the figure will be a circle.

16. *For a ſpiral, or volute*, take two points in a line, A B; the points to ſerve one after another as centres. As for inſtance, having drawn the ſemicircle A B, ſet one foot of the compaſſes in B, and open the other to the length A B, and deſcribe a ſemicircle, A C; then ſet one foot in A, take the interval A C, and draw the ſemi-circle C D; and this continue as long as you pleaſe, ſtill ſhifting centres.

Of Lines and Points in Perſpective.

The TERRESTRIAL LINE,
BASE LINE,
LINE of the PLAN,
is the line an object is placed or ſtands upon, of which each object has its particular one, and the whole draught a general one.

This is always parallel to the horizon, as is ſeen in A B of the firſt figure of the plate, F G of the ſecond, and N O of the third; and ſometimes ſerves to determine the lengths and breadths; particularly that at the bottom of the piece, whereto all the meaſures are to be accommodated; as will be ſhewn hereafter.

The POINT of SIGHT,
The POINT of the EYE,
PRINCIPAL POINT,
POINT of PERSPECTIVE,
is a point in the axis of the eye, or in the central ray, where the ſame is interſected by the horizon.

Thus the point E in the firſt figure, is the point of ſight in the horizon C D, wherein all the viſual rays meet.

It is called the *Point of the Eye*, or *Ocular Point*, becauſe directly oppoſed to the eye of the perſon who is to view the piece.

Of the POINT *or* POINTS *of diſtance.*

Theſe are a point or points (for there are ſometimes two of them) placed at equal diſtance from the point of ſight.

They are thus denominated, by reaſon the ſpectator ought to be ſo far removed from the figure or painting, and the terreſtrial line, as theſe points are from the point of the eye, and are always to be in the horizontal line.

Thus, H I (ſee plate, fig. 2.) being the horizon, and K the point of ſight, L and M are points of diſtance, ſerving to give all the ſhortenings.

Thus *ex. gr.* if from the extremes of the line F G you draw two lines to the point K, and from the ſame points draw two lines to the points of diſtance M and L, where theſe two lines G L and F M cut the lines F K and GK in, the points X and Y will be the line of depth, and the ſhortening of the ſquare, of which F G is the ſcale and baſe. The lines drawn to the points of ſight are all viſual rays, and thoſe drawn to the points of diſtance all diagonals.

Of the POINT *of* FRONT, *fig.* 3.

The point of DIRECT VIEW, or of the FRONT, is when we have the object directly before us, and not more on one ſide than the other; in which caſe it only ſhews the foreſide, and if it be below the horizon, a little of the top too; but nothing of the ſides, except the object be polygonous.

Thus the plan A B C D fig. 3. is all in front, and if it were raiſed we ſhould not ſee any thing of the ſides A B or C D, but only the front A D: the reaſon is, that the point of view E being directly oppoſite thereto, cauſes a diminution on each ſide; which however is only to be underſtood where an elevation is the object; for if it be a plan, it ſhews the whole, as A B C D.

Of the SIDE POINT, *fig.* 4.

The point of OBLIQUE VIEW, or of the SIDE, is when we ſee the object aſide of us, and only as it were aſlant, or with a corner of the eye; the eye however being all the while oppoſite to the point of ſight: in which caſe we view the object laterally, and it preſents us two faces or ſides.

For inſtance, if the point of ſight be in F, the object G H I K will appear athwart, and ſhew two faces G K, and G H, in which caſe it will be a ſide point.

The practice is the ſame in the *ſide points* as in the front points; a point of ſight, points of diſtance, *&c.* being laid down in the one as well as the other.

Fig. 1

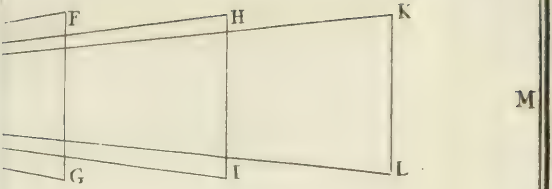


Fig. 2.

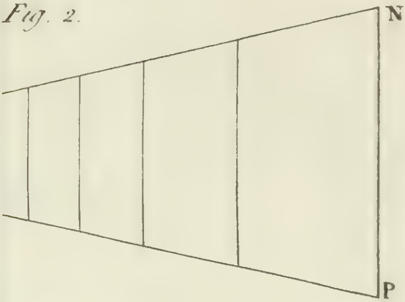


Fig. 3.

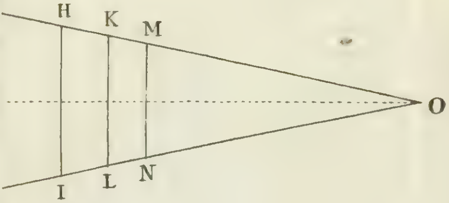


Fig. 4.

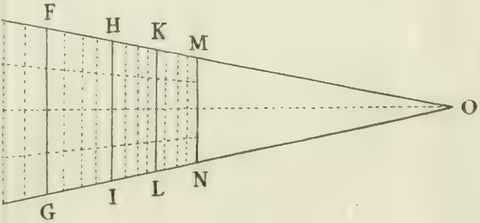


Fig 1

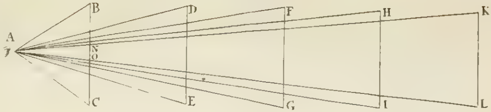


Fig 2

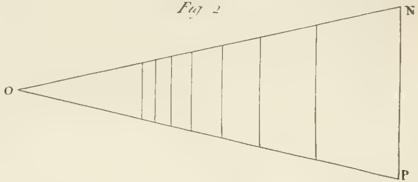


Fig 3

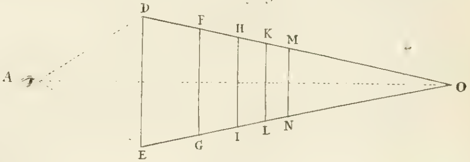
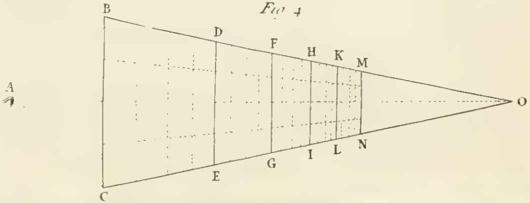
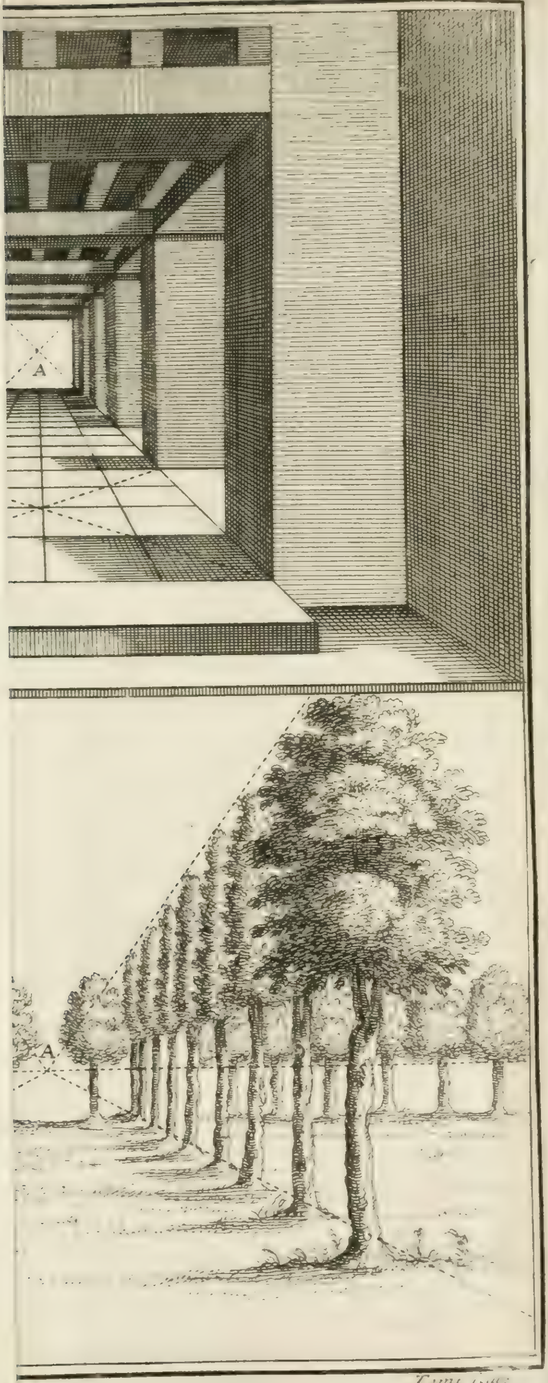


Fig 4

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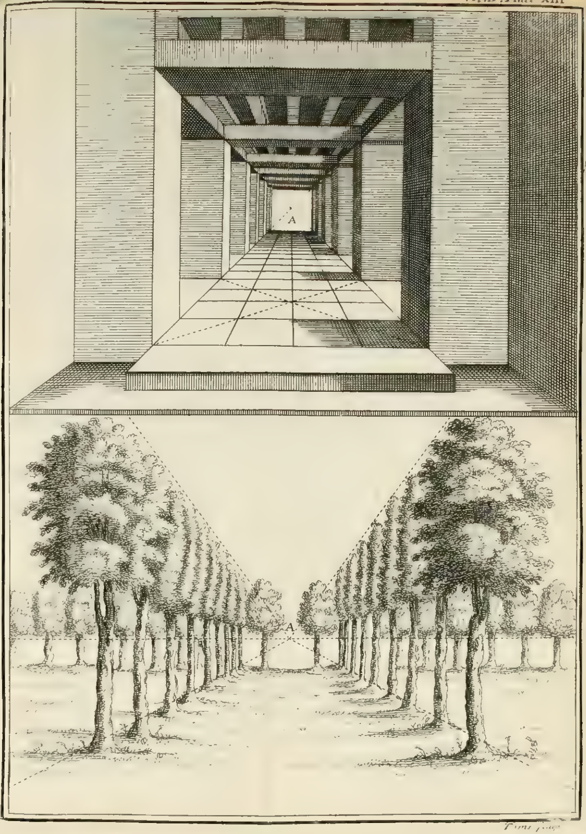
A
Tems sculp.



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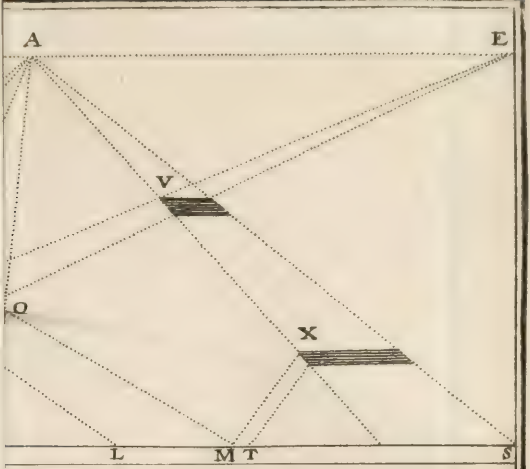


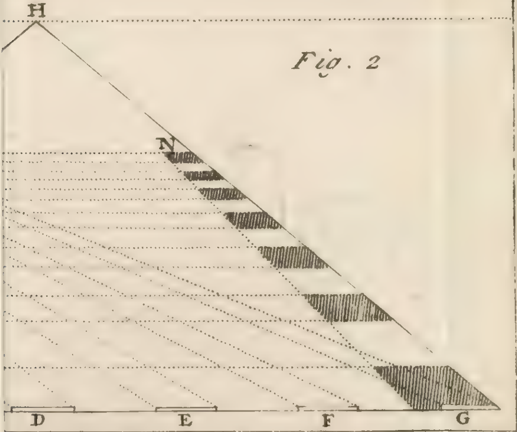
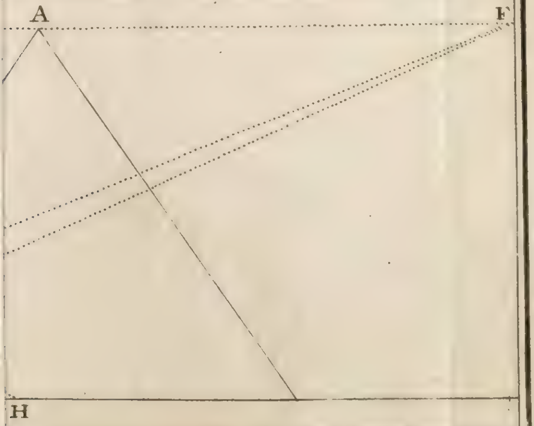


Fig. 2



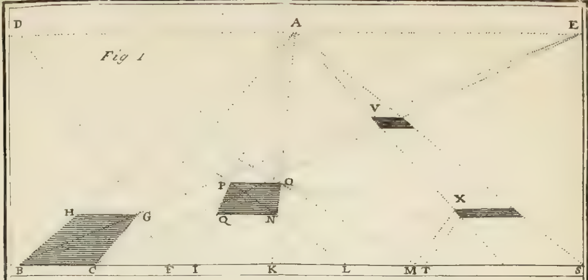


Fig 1

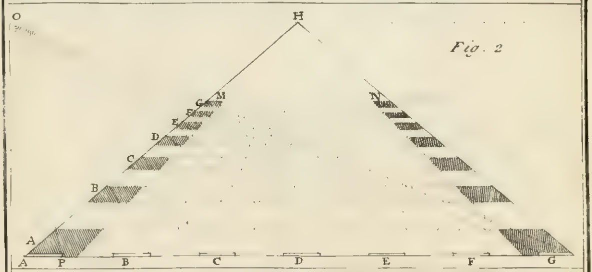


Fig. 2

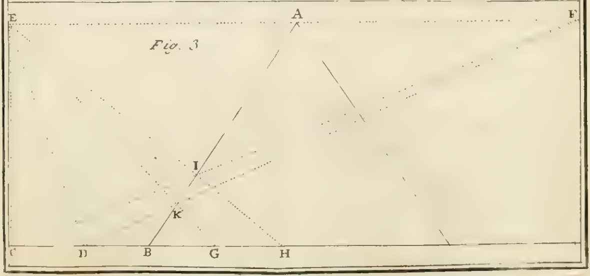


Fig. 3

Definitions in Perſpective.

ICHNOGRAPHY is the figure of the plat-form in *Perſpective*, or the plan any thing is to be raiſed upon: thus A B C D is the *ichnography* or plan of a ſquare body. See *Perſpective, plate fig.* 1.

ORTHOGRAPHY in *Perſpective*, is the figure of the front or foreſide of an object, as an houſe, *&c.* Or it is the figure of an object, as an houſe, *&c.* directly oppoſite to the eye. Thus E F G H is the *orthography* or fore-part of a cube or houſe. As the *ichnography* repreſents the plane, the *orthography* repreſents the ſide oppoſite to the eye. See *Perſpective, plate* 2. *fig.* 2.

SCENOGRAPHY is what exhibits the object quite raiſed and perfect, with all its diminutions and ſhadows; both in front, the ſides which may be ſeen, and top: thus I K L M N O P is a *ſcenography*, or perfect cube. This is the whole, and comprehends all the other parts. See *Perſpective, plate fig.* 3

Why objects appear the ſmaller, as they are at a greater diſtance.

Things appear according to the angle of the eye wherein they are ſeen, and this angle is taken at the eye, where the lines terminating the objects meet.

The eye A for inſtance, viewing the object B C, will draw the rays A B and A C, which give the angle B A C; ſo that an object viewed under a greater angle will appear large, and another under a leſſer angle, little.

Now tis certain, that among equal objects thoſe at the greateſt diſtance will appear under the ſmalleſt angle, and conſequently in all *perſpectives* the remoteſt objects muſt be made the ſmalleſt: as for example, if the eye be in A, the object B C which is the neareſt, will appear the biggeſt, becauſe ſeen under the greateſt angle; and the ſecond, third, fourth, and fifth objects, will all appear ſmaller and ſmaller, though really all equal; inaſmuch as the angles diminiſh in proportion as the objects recede.

If the eye were removed into M, K L would appear the largeſt, and B C in this latter caſe no bigger than N O. *See fig.* 1.

The ſecond figure is a ſequel of what we have advanced: for ſuppoſing the objects to appear ſuch as is the angle they are ſeen in, it follows, that if ſeveral lines be drawn between the ſides of the ſame triangle, they will all appear equal: thus all the lines comprized between the ſides O N, O P, of the triangle N O P, will appear equal to each other, and as objects comprehended under the ſame angle ſeem equal, ſo all comprehended under a greater angle, ſeem greater, and all under a ſmaller, ſmaller. *See fig.* 2.

Thus much being ſuppoſed; if there be a number of columns or pilaſters to be ranged in *perſpective*, on each ſide of a Hall or Church, they muſt of neceſſity be all made under the ſame angle, and all tend towards one common point in the horizon O: as for inſtance, the eye being placed in A, viewing the firſt object D E; if from the points D E you draw the viſual rays D O, E O, they will make the triangle D O E, which will include the columns D E, F G, H I, K L, M N, ſo as they will all appear equal. *Fig.* 3.

What has been ſaid of the ſides, is likewiſe to be underſtood of the cielings and pavements; the diminutions of the angles of remote objects, placed either above or below, following the ſame rule as thoſe placed laterally.

There is therefore no need of adding any thing farther, unleſs this, that you take care that there be as many ſquares or diviſions between the remoteſt objects, as between the neareſt; for in that caſe, though diſtant objects be the cloſer, as they are further from us, they will appear in ſome meaſure to preſerve their diſtance. Thus in B C D E, the interval between the four neareſt columns, there are ſixteen ſquares, and no fewer than ſixteen between the four remoteſt K L, M N. *Fig.* 4.

It follows from what has been ſaid, that if you join two triangles as in the laſt figure but one for the ſides, and two others of the laſt for the tops and bottoms of an object, all four will terminate in one ſingle point A, which is the point of ſight wherein all the viſual rays meet.

And this will give a proof of what we have advanced, *viz.* that objects diminiſh as they remove, the lower riſing, the upper falling, and the lateral cloſing or approaching: an example of all which is given in figure I. which exhibits as it were depths and diſtances, falling back and receding from us, though all equally near the eye. *See plate.*

The trees being ranged by the ſame law, have the ſame effect as the columns, *&c.* for being all comprehended in the ſame angle, and the two rows having each its own angle, and the angles all meeting in a point A, they form a third, which is the earth, and a fourth, which if you pleaſe is the air; and thus afford an elegant proſpect.

1. *Of the meaſures upon the baſe in perſpective.*

By the baſe line alone any depth may be given, and in any place at pleaſure, without the uſe of ſquares; which is a very expeditious way, though ſomewhat difficult to learn.

I ſhall however endeavour to make it underſtood, by reaſon that I ſhall frequently make uſe of it.

As for example, ſuppoſe the baſe line B S, the point of view A, and the points of diſtance D E; if now you would make a plan of a cube B C, draw two occult or dotted lines from the extremes B C to the point of ſight; then to give the breadth, take the ſame meaſure BC, and ſet it off on the terreſtrial line CF, and from F draw a line to the point of diſtance D; and where this line interſects the firſt ray C in the point G, will be the diminution of the plan of the cube B H G C.

If you would have an object farther towards the middle, take the breadth, and the diſtance of the baſe line, as I K; and to have the depth, ſet it as you would have it on the ſame baſe as L M, and its width both on L M. Then from L and M draw occult lines to the point of diſtance D, and from the points N O, where thoſe lines interſect the ray K, draw parallels to the terreſtrial line, and you will have the ſquare Q P O N.

After the ſame manner you may ſet off the other ſide of the ſquare which ſhould be on the baſe, as B H G C is here tranſferred to V. The points M and T, which are only two feet from the point S, afford a very narrow figure in X, as being very near.

2. *Of the baſe line, and a ſingle point of diſtance.*

Since the depths and widths may be had by the means of this baſe line, there is no need of any further trouble in making of ſquares; as ſhall be ſhewn in this example.

Suppoſe a row of trees or columns is to be made on each ſide; on the baſe line lay down the place, and the diſtance between them, with their breadth or diameters, as A B C D E F G; then laying a ruler from the point of diſtance O, to each of the points A B C D E F G, the interſections it makes on the viſual ray A H, will be the bounds of the objects deſired. *Fig.* 2.

To ſet them off on the other ſide upon the ray G H, ſet one foot of the compaſſes upon the point of the eye H, and with the other ſtrike an arch; the point wherein this cuts the ray G H, will be the correſponding bound.

Thus M will be the ſame with N, and ſo of the reſt, through which drawing parallels, you will have the breadths.

And as for the length, you may make it at pleaſure: ſetting it off from A, as for inſtance, to P, and then from P drawing a line to H, and where this cuts the other parallels, will be formed the plan required: which you may make either round or ſquare.

3. *Not to deceive one's ſelf in the meaſures.*

Never put any objects that are intended to be within the plan on the ſide of the point of diſtance, where you are to draw lines for the management of the depth.

Thus, ſuppoſe A B the viſual ray, whereon the meaſures are to be marked; if you would produce the points C and D thro' the ſame, don't draw the lines from the point of diſtance E, but from that oppoſite thereto, F: or if C and D were on the inſide, as G and H are, you ſhould not draw from the point F, but from E; by reaſon that the line of interſection is found between the two; conſequently the two will cut each other in the ſame points I K. *See fig.* 3,

Of Planes viewed directly, or in front.

From the third and fourth articles preceding, and the elevations that follow, it will appear that my intention is not to uſe geometrical plans, in order to the drawing of perſpectives: that being a double labour, and there being very few painters who would give themſelves the trouble, ſince I teach them to do the ſame thing by the uſe of the terreſtrial line.

But as there is no rule ſo general, but has its exceptions, ſo there are certain figures that cannot be put in *perſpective* without the uſe of ſuch plans: beſides the confuſion a man would be under, ſhould a plane be given him to put in perſpective, if he had not been inſtructed how to proceed.

On theſe conſiderations I have been induced to give the following rules; which may ſuffice to ſhew how any plane that can be required, or even imagined, may be put in *perſpective.*

1. *To ſhorten or diminiſh a* SQUARE. *See plate, fig.* 1.

As A B C D fig. 1. From A and B to the point of ſight E, draw the lines A E, B E; and from the ſame angles A and B draw two diagonals F B, A G; and the points H and I, where they interſect the rays A E and B E, will give the ſquare A B C D, diminiſhed in A H I B.

To do it without the geometrical plan, draw a line from B to F, or from A to G, or ſet off the line A B on the terreſtrial line, as in B K; and from K draw another line to F, which will give the ſame interſection I on the ray B E.

2. *To diminiſh a ſquare viewed by the angle* D. *See plate, fig.* 2.

Having deſcribed the plane A B C D, draw a line to touch or raſe the angle B, and falling perpendicularly on B D.

This being continued as a baſe line, lay your ruler on the ſide of the ſquare A D and D C, and where the ruler cuts the terreſtrial line make the points H, I.

Then from H and B draw lines to the point of diſtance P, and from I draw a line to the other point of diſtance G; and in the interſection of thoſe lines, make points, which will give you the ſquare K L M B.

To do without the plan: ſet off the diameter each way from the middle point B, as to H and I. But in either caſe no line is to be drawn to the point of ſight O.

3. *To diminiſh a* CIRCLE. *See plate, fig.* 3.

Draw a ſquare, A B C D about it, and from the angles A D and C B draw diagonals, dividing the circle into eight parts, and through the points where they cut it O O, draw lines from the baſe line perpendicular to D E F.

Then draw two diagonals Q R, S P, interſecting each other at right angles in the centre G.

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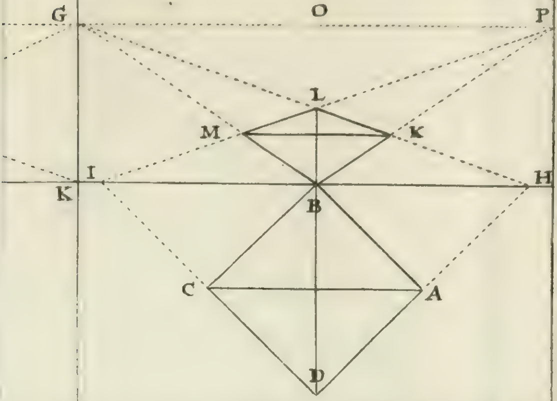

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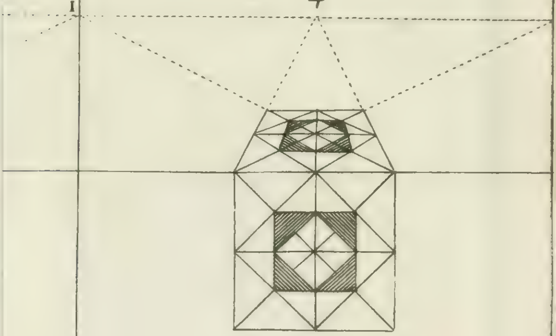

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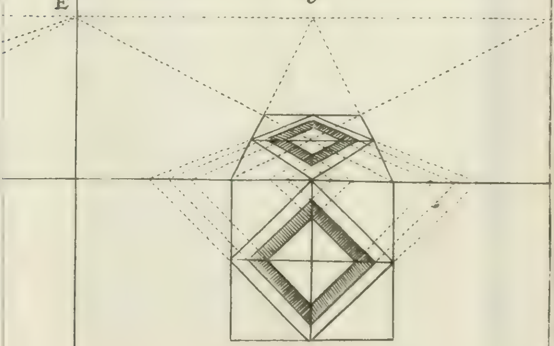

Toms sculp.

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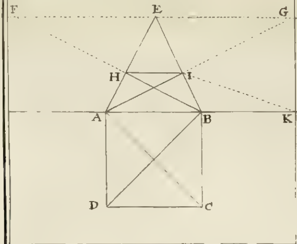

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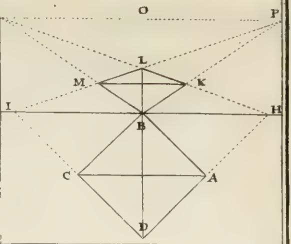

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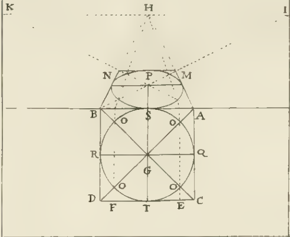

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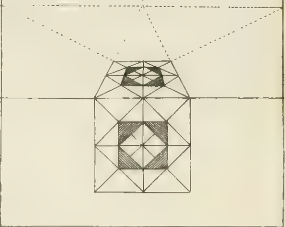

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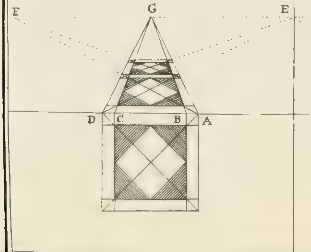

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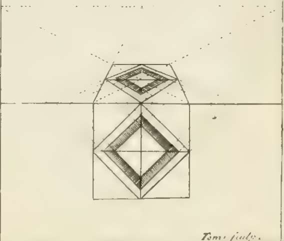


Tom: sculp.

Having thus diſpoſed the plan, draw lines from all the perpendiculars to the point of ſight H; and where they are interſected by the diagonals A K and B I, make points; the two laſt of which, M, N, give the ſquare which is to be divided into four by diagonals, interſecting each other in the point P.

In the laſt place, from the extremes of this croſs, draw curve lines through the ſaid points, which will give the form of the circle in *perſpective.*

This method may ſerve for ſmall circles, but for large ones there is another method more exact.

4. Figure the fourth is compounded of the two firſt, which is all that needs to be ſaid about it.

5. This fifth figure alſo depends on the two firſt, only here is a liſt or border going round, which the others have not.

To put the liſt in *perſpective* from the four rays A, B, C, D, draw lines from the point of ſight G, and where the inner rays B, C interſect the diagonals D F and D E, draw parallels to the baſe line; and you will have your deſire.

6. The ſixth figure is the ſame as the ſecond, except that it is ſurrounded with two borders.

PERSPECTIVE in painting, is uſed for a kind of picture, or *painting*, frequently ſeen in gardens, and at the ends of galleries; deſigned expreſly to deceive the ſight, by repreſenting the continuation of an alley, a building, a landſkip, or the like.

Of gardens in *perſpective*, ſee GARDEN.

Of rows of trees in *perſpective*, ſee ROWS.

Shadows in *perſpective*, ſee SHADOW.

Streets in *perſpective*, ſee STREET.

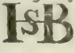
Walks in *perſpective*, ſee WALK.

PERSUASION is repreſented in *Painting*, &c. by a fantaſtical woman, a tongue faſtened to her head-attire, with an eye over it; ſhe ſeems whimſical, and is tied round with cords, with an animal with three heads.

The tongue denotes its being the inſtrument of *perſuaſion*, the eye, exerciſe and art, contributing to *perſuaſion*; the cords, force of eloquence, binding up the will; the animals ſignify three things, to inſinuate by the fawning dog, docility; by the ape, attention; by the cat, diligence.

PIETRO PERUGINO, born in the year 1446, ſcholar of *Andrea Verocchio*, lived at *Florence* and *Siena*, excelled in hiſtory painting, died in 1574, aged 78 years.

BALDASSAR PERUZZI *da Siena*, born in the year 1500, lived at *Rome*, excelled in hiſtory and architecture, died in 1536, aged 36 years.



HISBEL PEUN, an engraver of *Norimberg*, called *Hisbin*, he uſed this mark from the year 1513 to 1549.

Hans (or *John*) *Sebald Beham* alſo uſed the ſame mark.

PEWTER is a mixture of lead and tin, and has ſometimes in it, for the better hardening of it, and keeping it together, a ſmall quantity of *braſs* or *copper*.

P. F. ſtands for *Paul Farinati* of *Verona*, painter and inventor.

P. H. ſignifies *Peter Hys*, in certain pieces of devotion.

Phil. Th. 1589, ſtands for *Philip Thommaſini*.

P. *John Sebald Beham*, ſee letter B, and the letters V. P.

Pi. Ss. Bart. ſtands for *Peter Santi Bartoli*, engraver of *Perugini* in *Rome*.

PHILOSOPHY is repreſented in *Painting*, &c. by a woman, her eyes ſparkling and vivid, roſy cheeks, a vigorous conſtitution, though pretty old, and in grave habit.

Her venerable aſpect denotes reſpect, due to her as the mother of liberal arts; her books and ſceptre, that perſons of quality ought not to deſpiſe this queen; the Θ upon her breaſt ſignifies theory, and letter Π on the bottom of her garment, practice.

PHLEGM, is repreſented a groſs man, ſitting in a fur gown, clapping both hands into his boſom, his head one ſide bound up with a black cloth, almoſt covering his eyes, a tortoiſe by him.

His groſſneſs proceeds from coldneſs and moiſture; the fur of the otter, it being a flegmatic animal; his head inclined; his dulneſs like the tortoiſe by his ſide, becauſe it is a ſlow creature.

PHOEBUS, or SOL, *i. e.* the SUN, was repreſented by the ſtatue of a man, with his head half ſhaven.

By the head half ſhaven is intimated, that though his beauty or ſhining may be clouded for a time, yet that he will return, and beautify the ſame with his priſtine brightneſs; as the growing of the hairs, which (ſignify his beams) to their full extent and perfection again, may denote.

Lactantius relates, that *Phœbus*, or *Apollo*, was the chiefeſt god of the *Perſians*, who deſcribed him as follows; in the ſhape of a man, dreſſed in the *Perſian* habit, and with the head of a lion, wearing on it ſuch ornaments as the *Perſian* women uſed, holding by force a white cow by the horns.

By the head of the lion was ſignified the dominion of the ſun in the ſign Leo; *the cow repreſents the moon, whoſe exaltation is in* Taurus, *and his forcibly holding her by the horns, the eclipſe of the moon, which ſhe cannot avoid.*

Macrobius ſays, that there was found in *Aſſyria* the ſtatue of *Phœbus*, *Apollo*, &c. the father of *Æſculapius*, of poliſhed gold, in the form of a young man, and beardleſs, who ſtretching out his arms, held in his right hand a coachman's whip, and in his left a thunderbolt, with ſome ears of corn.

The *Lacedæmonians* painted *Apollo* with four hands, and as many ears.

By which they intimated the prudence and judgment of God, he being ready and quick to hear, but ſlow to ſpeak; and from hence grew that proverb among the Grecians.

Euſebius relates, that in a city of *Egypt* called *Elephantinopolis*, the image of *Apollo* was made in the ſhape of a man, as to his body, but with the head of a ram, with young and ſmall horns; and his aſpect of a bluiſh or cælurean green, not unlike to that of the ſea.

The head of the ram ſignifies the ſun's exaltation in the ſign Aries; *and the young horns, the change or new of the moon, made by her conjunction with the ſun, in which ſhe looks bluiſh.*

Euſebius relates, that in *Egypt* the image of *Sol* was ſet in a ſhip, carried up and ſupported by a *crocodile*; and that the *Egyptians* (before the invention of letters) framed the ſhape of the ſun by a ſceptre, on the top of which was an eye artificially engraven.

The ſceptre ſignified government, the eye intimated the power of beholding and overſeeing all things.

Martianus deſcribes the image of the SUN, in the form of a man, wearing on his head a royal and gorgeous crown, inchaſed with many precious gems, three of which adorn his forehead, ſix his temples, and three other the hindermoſt part of the crown; his hair hanging down in treſſes, appearing like refined gold, and his countenance wholly like flame; his garment thin, and wrought with fine purple and gold; holding in his right hand a ſhield, and in his left hand a flaming firebrand; and two wings on his feet, beſet with fiery carbuncles.

Herodotus writes, that the *Phœnicians* had the ſtatue of the *Sun* made of black ſtone, large and ſpacious at the botton, but ſharp and narrow at the top, and boaſted that they had this from heaven.

Pauſanias writes, that there was found in *Patra*, a city of *Arcadia*, the ſtatue of *Apollo* in the form of an ox or cow.

Lucian writes, that the *Aſſyrians* repreſented him with a long beard (intimating his perfection) having a ſhield on his breaſt, holding in his right hand a ſpear, at the top of which was *Victoria*; and in his left *anthos*, or the *ſun-flower*: his body was covered with a garment on which was depicted the head of *Meduſa*, from which hung dangling many ſwarms of ſnakes; on the one ſide of him an *eagle* flying, and on the other ſide a *nymph*.

Apollo is alſo drawn as a young man crowned with laurel, having long, curl'd, gloden hair, clad in a purple robe, holding a ſilver bow in his hand, and ſetting on a throne of emeralds; and at other times ſtanding on the ſerpent *Python*, with this motto, *Opifer per orbem dicor.*

PHYSICK, is repreſented in *Painting*, &c. by a woman of full age, with a garland of laurel, a cock in one hand, and a knotty ſtaff, round which a ſerpent is twiſted.

Her age ſhews that then a man is either a fool or a phyſician; the laurel denotes its great uſe in *phyſick*; the cock, vigilance, for a phyſician that adminiſters ought to be up at all hours; the ſerpent, becauſe by caſting her skin ſhe is renewed, ſo do men, being cured, renew their ſtrength.

PHYSIOGNOMY [Φυσιογνωμία of φύσις nature, and γνωμη opinion] is a *Greek* word, ſignifying the rule or law of nature, by which the affections of the ſoul have relation to the form of the body: ſo that there are fixed and permanent ſigns which diſcover the paſſions of the ſoul; that is to ſay, thoſe which reſide in the ſenſitive parts thereof.

It is, ſays Monſ. *Le Brun*, the opinion of ſome naturaliſts who have written of *Phyſiognomy*, that the affections of the ſoul do follow the temperament of the body, and that the external characters are certain ſigns of the affections of the ſoul; ſo that by the form of every creature, its humours and tempers may be known.

As for example; the *lion* is robuſt and ſinewy, which intimates that he is ſtrong; the *leopard* ſupple and delicate, and likewiſe cunning and treacherous; the bear is ſavage, wild and terrible, and he is no leſs cruel; ſo that the nature of every animal being deſcribed by its external form, the *Phyſiognomiſts* ſay, that if a man happens to have any part of his body reſembling that of a brute, we may from ſuch part draw conjectures of his inclinations.

Some again ſay, that this ſcience may be exerciſed by diſſimilitude and contraries.

As for example; if the harſhneſs of the hair be a ſign of a rough and ſavage nature, a ſoft hair indicates a nature gentle and tender; alſo if the breaſt being covered with thick hair, is a ſign of a hot, cholerick nature, that which is without hair ſhews mildneſs and ſweetneſs of temper.

Others again ſay, that to underſtand what are the parts or ſigns which mark the affections of animals, we muſt make the following diſtinction, *i. e.* that ſome are *proper*, and others are *common*; the *proper* are particular to a ſingle ſpecies; the *common* in ſeveral kinds; as laſciviouſneſs, though it be moſt predominant in goats, aſſes, and ſwine, yet other animals are not without it.

Therefore to know the proper ſign, we muſt conſider one kind of animal, univerſally ſubject to the ſame paſſion; and afterwards another kind, in which this paſſion is to be found in but ſome particulars.

Thus for a ſign of ſtrength, we muſt conſider all the ſpecies of animals, as the lion, bull, horſe, boar, *&c.* and if the ſign which is in the lion, be alſo in theſe other ſtrong creatures, and that weak animals have it not, this muſt be acknowledged to be a ſign of ſtrength.

Some ſay it is a ſign of ſtrength to have the extremities large, as the lion has, but this is doubtful; ſome other ſtrong animals, as the bull, horſe, *&c.* having them not large, but very ſinewy, and well jointed.

Some ſay an animal has divers affections: as for example; the lion is valiant, ſtrong, and cholerick; and he having a high front, and large extremities, to diſtinguiſh the ſign of valour, we muſt obſerve if bulls, and other ſtrong animals, have both theſe ſigns; and if ſuch other ſtrong animals have not a high front, we muſt ſay conſequently, that a high front is a ſign of valour, and large extremities a ſign of ſtrength.

But it is more to our purpoſe to reduce it to what may be neceſſary to *Painters*; for though they ſay that the geſture of the body is one of the moſt conſiderable ſigns which mark the diſpoſitions of the mind; yet we may content ourſelves with thoſe ſigns which we meet with only in the head; according to the ſaying of *Apuleius*, that the whole man ſhews himſelf in the head; and that if man is the epitome of the world, the head may well be called the epitome of the man: and animals being as different in their inclinations as men in their affections, we muſt firſt obſerve the inclinations which every animal has peculiar to its ſpecies, and then ſearch in their *phyſiognomy* the parts which particularly mark certain predominating affections.

Swine, for example, are naſty, laſcivious, gluttonous, and lazy; we muſt then obſerve what part marks gluttony, laſciviouſneſs, and lazineſs; becauſe a man may have ſome parts reſembling thoſe of a ſwine, and not have others: ſo that we muſt firſt know what parts are affected with certain inclinations.

In the ſecond place, the reſemblance and relation of the parts of a human face to that of a brute.

And laſtly, we muſt know the ſign which changes all the others, and increaſes or diminiſhes their force or vertue; which cannot be underſtood without demonſtration of their figures.

Phyſiognomiſts obſerve, that animals who have the noſe turned up are audacious; and audaciouſneſs is, when a creature raſhly undertakes the combat, not having ſtrength to maintain it; ſo as that would be audaciouſneſs in a ſheep, which is valour in a lion.

The difference of a human face from that of brutes, is, that man hath his eyes ſituate on one ſtrait line paſſing croſs to the ears.

Brutes on the contrary, have their eyes drawn down toward the noſe, more or leſs, according to their natural affections.

Secondly, man turns his eye-balls upwards, which *Brutes* cannot do, without turning up their noſes, their eye-balls naturally moving downwards; inſomuch that ſometimes a great part of the white appears above them, but they never raiſe them upward.

Thirdly, the eye-brows of brutes never meet, their points always hanging down; but thoſe of men meet in the middle of the forehead, and raiſe their points at the ſide of their noſe.

They demonſtrate by a triangle, that the impreſſions of the ſentiments of animals are carried from the noſe to the ear, and from thence to the heart, the loweſt line whereof cloſes the angle with that from the noſe: and when the line from the noſe to the ear goes through the middle of the eye, and the line from the heart croſſes the mouth, it is a ſign that the animal is fierce, cruel, and blood thirſty.

There is another ſmall triangle, the point of which is in the outward corner of the eye, from whence the line following that of the upper eye-lid, forms an angle with that which comes from the noſe. When theſe two lines meet in the forehead, it is a ſign of ſagacity, as may be obſerved in elephants, camels, and apes: but if the angle meets upon the noſe, it ſhews ſtupidity and weakneſs, as in aſſes and ſheep, which is more or leſs according as the angle meets higher or lower.

Theſe things (ſays the famous Monſ. *Le Brun*) are all demonſtrated by examples drawn after the life.

Of PICTURE *in general.*

There are always four principal things to be conſidered in every picture, *viz.* 1. the *invention*; 2. the *proportion*; 3. the *colour*; and 4. the *life*.

1. *Invention*; this ought to be free, and flow from a general knowledge of antiquity, hiſtory, poetical fictions, geometrical concluſions, and optical conſiderations, according to its ſituation or aſpect, either near or far off.

2. And this *invention* muſt expreſs proper and fit things agreeing with the circumſtances of *place*, *time*, *matter*, and *perſon*; and alſo having reſpect to the modes of habits peculiar to the country or people, whether *ancient* or *modern*.

3. As to *Proportion*, *Analogy*, or *Symmetry*, that is what limits each part to its proper ſize in reſpect to the whole.

Whatſoever is different from this, is defective as to beauty, and may not improperly be called deformity.

4. *Proportion* is called by artiſts the deſigning lines, which are firſt drawn, before the whole is painted.

5.

5. *Theſe proportions, or lineal deſigns, draughts, and sketches may be called picture; which being well done, ſhew not only the ſhape, but alſo the intent.*

6. *The proportion of a* Blackmoor *may be drawn in lines only, and ſuch as ſhall be like him: now this skill proceeds from the very higheſt principles of art.*

7. ***Colour*** is that which makes the *picture* reſemble what we deſign to imitate, by mixing of various colours together.

8. In making any thing apparent, it is neceſſary to expreſs its oppoſite or contrary.

9. *So lights and ſhadows forward ſet forth paintings outwards, as tho' you might take hold of them with your hand; blackneſs makes things ſeem farther off, and is uſed in things that are hollow, as caves, wells,* &c. *the more deep the more black.*

10. *Brightneſs* exceeds, and is as *light* ſparkling in ſplendor. It is uſed in the glory of angels, twinkling of gems, armour, veſſels of gold and ſilver.

11. In painting of a man, each limb ought to be grac'd with its proper and lively colour; make the black entirely black, the white pure, intermixt with redneſs.

12. But to paint purely the exquiſite beauty of a woman, can never be well done (except it be by a very ingenious artiſt indeed) her rare complexion being ſcarcely to be imitated by colour: *there is no man really knows the exact mixture for ſuch a countenance.*

13. *Life,* or *Motion,* is that from which *action* or *paſſion* does reſult, which in coloured pictures is ſeen with a lively force of geſture and ſpirit.

14. Therefore to do this it is neceſſary that the artiſt be well acquainted with the nature, manners, and behaviour of men and women, as in *anger, ſadneſs, joy, earneſtneſs, idleneſs, love, envy, fear, hope, deſpair,* &c. every diſturbance of the mind alters the counte-nance into ſeveral poſtures.

15. The head caſt down indicates humility; caſt back, *arrogancy* or *ſcorn*; hanging on the neck, *languiſhing*; ſtiff and ſturdy, moroſeneſs of mind.

16. The various poſtures of the head ſhew the paſſions; the countenance, the ſame; the eyes, the like; and in a word, all the other parts of the body contribute ſomething, more or leſs, to the expreſſions of the ſaid paſſions of the mind, as is eaſily to be obſerved in the life.

In excellent pieces you may view at a diſtance, read the mind of the artiſt in the formality of the ſtory.

17. Laſtly, you muſt always firſt conceive that in your mind which you would expreſs in your work; that your endeavours

being aſſiſted with an intellectual energy, or power of operation, may at length render your productions perfect.

The diſpoſition of PICTURES.

1. Antique works, as *groteſque*, may become a wall, the borders and freezes of other works; but if there be any draughts in figures to the life upon the wall, they will be beſt of black and white, or of one colour heightned; if they be naked, let them be as large as the place will allow; if of columns, aqueducts, arches, ruins, cataracts, let them be bold, high, and large of proportion.

2. Let the beſt pieces be placed to be ſeen with ſingle lights, for ſo the ſhadows fall naturally, being always fitted to anſwer one light; and the more under or below the light, the better, eſpecially in mens faces and larger pieces.

3. Let the porch, or entrance into the houſe, be ſet out with ruſtick figures and rural things.

4. Let the hall be adorned with ſhepherds, peaſants, milk-maids, neat-herds, flocks of ſheep, and the like, in their reſpective places, and proper attendants; as alſo fowls, fiſh, and the like.

5. Let the ſtair-caſe be ſet off with ſome admirable monument or building, either new or ruinous, to be ſeen and obſerved at a view, paſſing up; as let the cieling over the ſtair-caſe be painted with figures foreſhortned, looking downwards out of clouds, with garlands and *cornucopia's*.

6. Let landskips, hunting, fiſhing, and fowling pieces, hiſtories, and antiquities, be placed in the great chamber.

7. Place the pictures of the king and queen, or their coats of arms, in the dining-room, forbearing to place there any other pictures of the life, as not worthy to be their companions, unleſs at the lower end two or three of the chief nobility, as attendants on their royal perſons; for want of which you may put in their places ſome of the neareſt blood.

8 In the *inward*, or *withdrawing chambers*, place the draughts of the life of perſons of honour, intimates or ſpecial friends and acquaintance, or of artiſts only.

9. In *banquetting rooms* place chearful and merry paintings, as of *Bacchus*, *Centaurs*, *Satyrs*, *Syrens*, and the like, but not any obſcene pictures.

10. Hiſtories, grave-ſtones, and the beſt works, become *galleries*, where every one may walk, and exerciſe their ſenſes, in viewing, examining, delighting, judging, and cenſuring.

11 In *ſummer-houſes* and ſtone walks, place caſtles, churches, or ſome fair buildings.

12. In *terraces* place boſcage, and wild works.

13. Over *chimney-pieces* place only landſkips, for they chiefly adorn.

14. And in the *bed-chamber* place your own, your wife's and children's pictures, as only becoming the moſt private room, and your modeſty, leſt (if your wife be a beauty) ſome wanton and libidinous gueſt gaze too long on it, and commend the work for her ſake.

15. In hanging your pictures, if they hang high above reach, let them incline a little forward at the top, becauſe otherwiſe it is obſerv'd, that the viſual beams of the eye, extending to the top of the picture, appear farther off, than thoſe at the foot.

EDWARD PIERCE was a good hiſtory and landſcape painter in the reigns of King *Charles* I. and II. He alſo drew architecture, perſpective, *&c.* and was much eſteemed in his time, little of his work now remains, the far greater part having been deſtroyed by the dreadful fire in 1666. it chiefly conſiſting in altar-pieces, cielings of churches and the like; of which laſt ſort there is one yet remaining, done by him in *Covent-garden* Church; in which are to be found many admirable parts of a good pencil. He work'd ſome time for *Van Dyke*, and ſeveral pieces of his performance are to be ſeen at *Belvoir* Caſtle in *Leiceſterſhire*, the noble ſeat of the Duke of *Rutland*. He died in *London* about 40 years ago, leaving behind two ſons, who both became famous in their different ways; one was a moſt excellent carver in ſtone, as appears by a noble marble vaſe of his doing at *Hampton-Court*; there is a fine head of Mr. *Pierce* the father, in Mr. *Seamer* a goldſmith's poſſeſſion, which was painted by *Dobſon*.

PIETY is repreſented [*in painting*, &c.] by a woman of a very pale complexion, a *Roman* noſe, flame inſtead of locks, ſhe is winged, with her left-hand towards her heart, in her right a cornucopia pouring out things neceſſary for life.

The wings declare her celerity; the flames the ſpirit enflamed with the love of God; the left-hand that a pious man gives proofs of it without oſtentation; the horn of plenty, the undervaluing of worldly riches, and a liberal aſſiſtance to the poor.

PIETY is alſo repreſented in painting, in the form of a lady of a ſober countenance; holding in her right-hand ſtretch'd out a ſword over an altar; and in her left-hand a ſtork; and by her ſide an elphant and a child.

The ſtork is ſo call'd of ϛόργη, the reciprocal or mutual love of parents, of whom this bird was ever an emblem, for the love and care ſhe hath of her parents being old; the elephant is ſaid to worſhip towards the riſing ſun.

To make French PINK.

This is uſually made with the white of *Troye*, which is otherwiſe call'd *Spaniſh white* or *French* and *Avignon* berries; but it is apt to change colour; ſo that it will be better to make it of *white-lead* or *ceruſs*, ground very fine on a marble. When it is ground, take it up with a wooden *ſpatula*, and ſet it to dry in the ſhady part of a room; then bruiſe *French berries* in a marble mortar with a wooden peſtle, and boil them in a lidded earthen pot, till the third part or more be evaporated.

Strain this decoction through a linnen cloth, and put into it the quantity of two or three ſmall nuts of *alum*, to hinder it from changing colour; when it is diſſolv'd, dilute the *white* with this decoction, to the conſiſtence of a pretty thick pap, or rather paſte, which you are to work well between your hands, and make up into trochisks, and lay them to dry in an airy room: when they are dry, dilute them again two or three times with the ſame decoction, according as you would have your pink bright or deep, and ſet it to dry each time.

Take notice that the liquor or decoction muſt be warm, when the paſte is diluted with it, and that you muſt make it a-freſh, when the firſt is tainted; taking care never to touch it with iron or ſteel; but always uſing a wooden ſpatula.

SEBASTIANO *del* PIOMBO, born in the year 1485, ſcholar of *Gio Bellini*, and ſtudied under *Giorgione*, liv'd at *Venice* and *Rome*, excell'd in hiſtory and portraits, died in 1547, aged 62 years.

PIONY [*in miniature*] *to paint.*

Let the firſt lay be of *Indian lake* and *white* of a pretty good body; and then ſhade with a leſſer quantity of *white*, which however muſt be quite diſus'd in the deepeſt places. When this has been done, finiſh with ſtrokes of the ſame colour; charging it ſtrongly with gum in the darkeſt ſhade, and heightening the lights and the edges of the brighteſt leaves, with *white* and a little *lake:* you muſt alſo expreſs ſmall veins juſt like the ſtrokes of hatching; but they muſt appear more.

The green of this flower muſt be of the ſea-kind and ſhaded with *Iris*.

FRANCIS LE PIPER was ſon of a *Kentiſh* gentleman, deſcended from a *Walloon* family; being of a gay and facetious humour, his manner was humourous or comical. He delighted in drawing ugly faces, and had a talent particular for it, that he would by a tranſient view of and remarkable face of man or woman that he met in the ſtreet, retain the likeneſs ſo exact in his memory, that when he expreſt it in the draught, the ſpectator,

tator, who knew the original, would have thought the perſon had ſat ſeveral times for it.

'Tis ſaid of him he would ſteal a face; and a man that was not handſome enough to deſire to ſee his picture, ſat in danger in his company.

The greateſt curioſities that he ſought after, were the works of the painters, which he examined every where with pleaſure and judgment, and formed to him a manner of deſign which no man in that kind ever excelled, and perhaps never equalled. Having a good eſtate of his own, and being generous, as moſt men of genius are, he would never take any thing for his drawing; he drew them commonly over a bottle, which he loved ſo well, that he ſpent great part of his hours of pleaſure in a tavern.

This was the occaſion ſome of his beſt pieces, eſpecially ſuch as are as large as the life, are in thoſe houſes, particularly at Mr. *Holms*'s, at the *Mitre-Tavern* in *Stocks-Market*; where there is a room called the *Amſterdam*, which is adorned with his pictures in black and white. The room takes its name from his pieces, which repreſent a Jeſuit, a Quaker preaching, and ſome other preachers of moſt religions that were liable to be expoſed; was called the *Amſterdam*, as containing an image of almoſt as many religions as are profeſſed in that free city. The two moſt remarkable figures are the Jeſuit and the Quaker; wherein the differing paſſions of thoſe two ſects are ſo admirably well expreſſed, that there appears no want of colours to render them lively and perfect. He drew alſo many merry pieces for one Mr. *Shepherd* a vintner, at the *Bell* in *Weſtminſter*; which Mr. *Holms* purchaſed, to make his collection of his maſter's pieces more compleat, and the benefit of ſhewing them has not been a little advantageous to his houſe. Mr. *Le Piper* drew another famous droll piece, repreſenting a conſtable with his mirmydons, in very natural and diverting poſtures. He ſeldom deſigned after the life, and neglected the part of colouring: but yet he ſometimes, tho' very rarely, coloured ſome of his pieces, and as we are informed was not very unſucceſsful in it.

He drew the pictures of ſeveral of his friends in black and white, and maintained a character of truth, which ſhewed that if he had thought fit to beſtow ſo much time as was neceſſary to perfect himſelf in colouring, he would have rivalled the beſt of our portrait painters in their reputations.

Towards the latter end of his life, having brought his circumſtances into a narrower compaſs than he found them on his father's death, he ſometimes took money. He drew ſome deſigns for *Iſaac Becket*, who performed them in *mezzotinto*. Thoſe drafts were generally done at a tavern, and whenever he pleaſed, he would draw enough in half an hour to furniſh *Becket* a whole week's work.

His invention was fruitful, and his drawing bold and true.

He underſtood landskip painting, and performed in it to perfection. He was particularly a great maſter in perſpective; in deſigning of his landſcapes, he had a manner peculiar to himſelf: he always carried a long book about him like a muſick-book, which when he had a mind to draw, he opened, and looking thro' it, made the lower corner of the middle of the book his point of ſight, by which when he had formed his view, he directed his perſpective, and finiſhed his picture.

His hand was ready, his ſtrokes bold, and his etching ſhort.

He drew ſeveral of the Grand Signiors heads for Sir *Paul Rycaut*'s hiſtory of the *Turks*, which were engraven by Mr. *Elder*.

In the latter part of his life, he apply'd himſelf to the ſtudy and practice of modelling in wax, in *Baſſo Relievo*, in which manner he did abundance of things with very good ſucceſs.

Being one time at a tavern, with Mr. *Faithorn*, Mr. *Sturt* the graver, and others, he sketched a head with a coal, and gave it to Mr. *Faithorn*, who touch'd upon it: in the mean time Mr. *Le Piper* drew another upon another trencher, and exchanged with Mr. *Faithorn* for that which he had touch'd.

They did thus ten times, and between them wrought up the heads to ſuch a height of force, that nothing could be better done of the kind.

Theſe trenchers are ſtill extant, but we could not hear in whoſe hands they are at preſent.

He died in *Aldermanbury* about 40 years ago, yet lives ſtill in the memory of his acquaintance, with the character of an accompliſhed gentleman, and a great maſter in his art. His pieces are ſcattered up and down, chiefly in this city, and the beſt and moſt of them are in the hands of Mr. *Le Piper* his brother, a merchant of *London*.

His corps was carried from *Chriſt's-church* hoſpital, to the church of St. *Mary Magdalen Bermondſey* in *Southwark*, where 'twas buried in a vault belonging to his family.

To make a PLANT *grow in two or three hours.*

Take aſhes of moſs, and moiſten them with the juice of an old dunghil, (being preſs'd out and ſtrain'd) then dry them a little, and moiſten them as before; do this four or five times, put this mixture, not being very dry, nor very moiſt, into an earthen veſſel, and in it ſet ſeeds of lettice, purſlain or parſley, (for they will grow ſooner than other ſeeds) being firſt impregnated with the eſſence of a vegetable of its own ſpecies (ſome ſay the juice of the ſame plant, but eſpecially the ſpirit will do inſtead of the eſſence) till they begin to ſprout forth; which then put into the ſaid earth, with that end upwards which ſprouts.

Set the veſſel into a gentle heat, and when it begins to dry, moiſten it with the ſaid juice of dung; thus you may have a ſallet while ſupper is making ready.

To reduce a whole vegetable into a liquor, which may be call'd the eſſence thereof.

Take the whole plant with flowers and roots, bruiſe them in a mortar, put all into a large glaſs veſſel, (or a wooden one, which is better) ſo that two or three parts may be empty; cover it exceeding cloſe, and let it ſtand in putrefaction, in a moderate heat for a year, and it will all be turned into water.

To make the lively form and idea of any plant appear in a glaſs.

Take the water above-mentioned, diſtil it in a good glaſs in an aſh heat, and there will come forth a water and oil, and in the upper part of the veſſel a volatile ſalt: ſeparate the oil, and keep it by itſelf: diſſolve the volatile ſalt in the water, and purify it by filtering and coagulating.

Imbibe this purified ſalt with the ſaid oils, until it will imbibe no more: digeſt them well together for a month in a veſſel hermetically ſealed; and ſo you will have a moſt ſubtile eſſence, which being held over a gentle heat, or the flame of a candle, by this means it may be made hot, and you will ſee the fine ſubſtance (which is like the impalpable aſhes or ſalt) ſend forth from the bottom of the glaſs, the manifeſt form and ſhape of the vegetable, vegetating and growing by little and little, and putting on ſo fully the form of ſtalks, leaves and flowers, in ſo perfect and natural a manner, that you would believe the ſame to be real; when in reality it is only the ſpiritual idea or form, ariſing with the ſpiritual eſſence of the plant: this, were it join'd with its proper earth, would take to itſelf a more ſolid body.

But as ſoon as the veſſel or glaſs is remov'd from the fire, this image or repreſentation vaniſhes, becoming a chaos and confus'd matter, returning to its ſediment, from whence it aroſe.

Another way to make the eſſence of a PLANT.

Put the herbs, flowers, ſeeds, ſpices, *&c.* into rectified ſpirit of wine; extract a very ſtrong and deep tincture; upon which put ſtrong oil of ſalt, and digeſt in *balneo* till an oil ſwim above, which ſeparate; or elſe draw off the ſpirit of wine in *balneo*, and the oil or eſſence will remain at bottom:

but before the ſpirit of wine is abſtracted, the oil or eſſence will be blood-red.

Another way to make the true eſſence, or rather quinteſſence.

Make the water, oil and volatile ſalt, as before is taught, and from the fæces extract the fixed ſalt, which purify according to art; which ſalt reſolve in a cellar upon a marble ſtone to an oil; which is that call'd *per deliquium:* filtre it and evaporate, till the ſalt is as white as ſnow, with theſe ſalts imbibe as much of the oil, as you can make it receive; then digeſt it till the oil will not ſeparate from the ſalt, but become a fixt powder melting with an eaſy heat.

PLEASURE is repreſented [*in painting*, &c.] by a youth crowned with a myrtle garland, half clothed, winged, a harp in his hand, and buskins on his legs.

The myrtle denotes the ſame being dedicated to *Venus*, wherewith *Paris* was crowned when he paſt judgment in favour of her; his wings, that nothing vaniſhes ſooner than pleaſure; the harp the tickling of his ſenſes with muſick; his buſkins inconſtancy, and his under-valuing gold to ſatiate his appetite.

PLENTY is repreſented [*in painting*, &c.] by a beautiful lady crowned with a garland, in a green gown embroidered, with a cornucopia in her hand; ſhe is no leſs amiable for her beauty, than her contrary, want, is deformed and odious.

The garland denotes chearfulneſs, and the mirth that does inſeparably accompany her; the cornucopia is an emblem of the affluence of all things neceſſary for human life.

Plato tells us, that PLUTO ſits (in the lower region) majeſtically in a chair of ſtate, holding in one hand a black imperial ſceptre, having his head adorn'd with a ſtately crown; that on his left-hand ſits his wife *Proſerpine*, attended with many furies and evil ſpirits, and at whoſe feet lies chained the dog *Cerberus*.

He is alſo painted with long curl'd black hair; clad in a robe of cloth of gold.

He is alſo by the antients, painted riding in a chariot, drawn by four furious black horſes, from whoſe fiery noſtrils proceeds thick and ill-favoured ſmoke.

Some repreſent him, with his head incircled with a garland of *cypreſs leaves*, others with thoſe of *Narciſſus*.

The firſt ſhews ſadneſs and horror, and are us'd at burials and about the dead: but the others are more grateful, and are us'd in memory of the untimely death of the youth Narciſſus, *kill'd by a wild boar.*

CORNELIUS POELENBURGH born in the year 1590, ſcholar of *Abraham Bloemart*, and ſtudied at *Rome* and *Florence*;

rence; liv'd at *Utrecht*, and in *England*, excell'd in naked-boys, landſcapes, ruins and ſmall figures, died in 1667, aged 77 years.

POETICAL FURY is repreſented [*in painting*, &c.] by a briſk young beau of a ruddy complexion, crowned with laurel bound about with ivy, in a writing poſture, but turning his head back toward heaven.

The wings declare the quickneſs of his fancy, which ſoars aloft and carries an encomium with it, which ſtill remain freſh and green as the laurel and ivy intimate; looking upwards, the ideas of ſuper-natural things, which he writes down.

POETRY is repreſented [*in painting*, &c.] by a lady in a sky-coloured garments, with ſtars and wings on her head, a harp in her right-hand, crowned with laurel, and a ſwan at her feet.

The sky colours ſignify that none can excel in this art, if he be not endowed with extrarordinary talents from heaven; the harp, becauſe they us'd to make poetry and muſic to be in a harmonious conſort; the crown ſhews that the poet's deſign is to be renowned; the ſwan is the emblem of muſick; the ſtarry robe divinity, as having its original from heaven

POLISHERS *and* POLISHING; a poliſher is an inſtrument call'd alſo a *burniſher*, us'd for poliſhing and burniſhing *gold*, *ſilver* and other metals, when gilt or ſilver'd, and matters of other kinds proper to take poliſh.

Gilders uſe an iron poliſher to prepare their metals before gilding, and the blood-ſtone to give them the bright poliſh after gilding.

The *poliſher* us'd by the ſpur and bit-makers, *&c.* is part iron, part ſteel, and part wood. This inſtrument conſiſts of an iron bar, with a wooden handle at one end, and a hook at the other, to faſten it to another piece of wood, held in the vice, while the workman is working.

In the middle of the bow within ſide, is what they properly call the poliſher, which is a triangular piece of ſteel, with a tail, by which it is riveted to the bow.

A cutler's POLISHER, is a kind of wooden wheel or grinder, made of walnut-tree, about an inch in thickneſs, and of what diameter or largeneſs you pleaſe, this is turn'd by the great wheel; and it is with this they poliſh and ſmooth their works with *emery* and *putty*.

The poliſhers us'd by ſpectacle-makers, are pieces of wood a foot long, ſeven or eight inches broad, and an inch and a half thick, covered with old caſtor hat, whereon they poliſh the ſhell and horn frames their ſpectacle glaſſes are to be ſet in.

POLISHING LOOKING-GLASS. After looking-glaſſes have been ground, they are to be poliſhed, they ſtill looking but ſomething like a ſlate. The poliſhing is perform'd in the following manner: the plate is laid down on a ſtone plac'd horizontally, and, in a bed of plaiſter of *Paris* calcin'd and pulveriz'd very fine and ſifted; which being made into a ſort of paſte by water, and plaiſter'd up the edges of the plate, dries and hardens, and ſo keeps it immoveable; then the workman fixing a ſtrong bow of yew or ſome other tough wood, to a board fixed up to the ceiling of the room, fixes alſo the other end into an hole made in a wooden parallelopepid of about four inches long, cover'd with a ſort of coarſe woollen cloth well drench'd with *Tripoly*, tempered with water, works it with this block and bow all over by ſtrength of arm, till the plate has got a perfect politure.

POLVERINE. *Of the places whence* Polverine, Rochetta, *and* Soda *are gotten, which ſerve for making glaſs and cryſtal, and their differences.*

After having delivered the manner of making glaſs, it will be neceſſary to explain, whence the ſalt that ſerves to make it, is extracted, ſince that is the foundation of the art, and without it glaſs cannot be made, except it be with the ſand we have mentioned elſewhere; which will do the buſineſs without any other help, becauſe it contains in it a great quantity of nitre.

It is common to call all aſhes or polverine, that is us'd to make glaſs, by the name of *Rochetta*; heretofore it us'd to be brought out of *Syria*, from the eaſtern parts of it, where it grew in great abundance: but at preſent it comes from *Alexandria*, from *Tripoli* and from *Spain*, where it equally abounds, but is ſomewhat different in quality: which we will here acquaint the reader with, for the ſake of thoſe that are curious and inquiſitive. The *Polverine* and the *Rochetta* come from *Syria*, they are the aſhes of a certain herb which grows there in great plenty, called *Kali*; the ſalt which is extracted both from the one and the other, is far whiter than that of *Soda*; hence the ſalt of it helps to make a very good cryſtal, but ſomewhat verging towards a sky-colour, the beauteouſneſs whereof is owing to the oriental *Polverine* (or that of the *Levant*;) whereas that of *Soda*, which is more plentiful, makes the cryſtal more blue, and has not that ſhining brightneſs, nor the ſame whiteneſs and beauty.

The difference between the *Polverine* and *Rochetta*, although made of the ſame herb, comes from the methods of preparing them: all ſorts of aſhes which come from the *Eaſt* for making glaſs are called *Polverine*; becauſe the aſhes are truly pulverized or in powder: and on the contrary, the other is called by the name of *Rochetta*, becauſe it is brought in hard lumps like ſtone. The glaſs-men know by experience that this laſt is better than the aſhes: for thoſe lumps when they are great and hard yield a whiter and ſharper ſalt than the powder, or pieces that are leſs. We ſhould be apt to think that might proceed from the difference of the plant, or from the different places where it grew, or from ſome ſophiſticated mixtures of heterogeneous ſalts, proceeding from ſalt ſea-water, or other damps that might be mixt with it, and noxious to it, if we were not aſſured that it is the preparation only that makes its difference.

It is certain, that to extract a very ſharp and poignant ſalt from *Rochetta*, there muſt be a great deal of care taken in its preparation: thoſe who make it in the *Levant*, firſt of all make a lixivium of the aſhes they have made, with which they ſprinkle the herbs they are to burn, after having dried them, and thus continuing to ſprinkle them each time with new lye, they make very ſharp aſhes, which congeal into great hard lumps as hard as flints, by reaſon of the abundance of ſalt, wherewith the herb is impregnated by the lixiviums; and it is hence that there is more ſalt extracted out of the *Rochetta*.

Polverine, on the contrary, has no ſuch preparation; the herbs are only burnt on iron hurdles or bars; afterwards, when cooled, they are gathered up, and laid by, whence they have leſs ſalt than the *Rochetta*; but this ſalt has no leſs virtue or goodneſs. Theſe two matters are now no more in uſe in *France*, as heretofore; but they uſe them ſtill at *Muran*, where the *Venice* glaſs is made.

Soda, which comes from *Egypt* and *Spain*, derives its name from the abundance of ſalt it contains; it is made of the ſame herb as the *Polverine* and *Rochetta* of the *Levant*, that is, of the ſame ſort and nature with that; and though this herb grows in great quantities in many places, and comes naturally amongſt water, and commonly flouriſhes near lakes; yet it is planted on the banks of the *Mediteranean*, in *France*, *Spain*, and *Egypt*; where by reaſon of the heat of the climate it grows in great quantities: but it has the moſt ſharpneſs, and is ſtrongeſt in *Egypt*, where there is never any rain. It is green all the winter, but they commonly cut it in the middle of ſummer, when it is in its full vigour: after it has dryed in the heat of the ſun, they gather it in heaps, and burn it on hurdles or grates made of iron, the aſhes falling through into a pit made underneath on purpoſe; there they grow into a hard maſs or ſtone, and are gathered and laid up for uſe, and are called *Soda*, as *Lobel* affirms, and their ſalt alkali. This herb called by moſt *Kali*, has yet divers other names. The ſame *Lobel* calls it *Soda*; *Geſner*, *Alkali*; *Dodon*, *Salicornia*; *Thalius*, *Anthilcides*;

Merret, *Kelp*; *Columna*, *Antillis* and alſo *Kali*; of whom this laſt ſays, he found it at *Naples*, and gives a deſcription of it, and aſſures us of its fitneſs for making glaſs. In *Languedoc*, where it is found on the ſea-ſhores, they call it flower of *cryſtal*; and in *France*, *Salſola*; which *Mattheolus* refutes in his apology againſt *Luſitanus*; who ſaw this plant grow at *Tergeſtum* in *Mauritania*; and that there grows a great quantity of it near *Salines de Trieſte*, in the ſtate of *Venice*; and, ſays, that the *Venetians* cover their glaſſes, which they tranſport beyond the ſeas, with this *Alga*.

The true name of this herb is *Kali*, there are ſeveral ſorts of it, but moſt of it good for nothing, flying all away in ſmoak; as does the knotty ſort of it, and thorny ſorts of it, or *Kali Spinoſum* which is found in ſeveral places about the river of *Thames*, and in other maritime places in *England*, which is the reaſon that the *Engliſh* never uſe it for glaſs: for if it be put upon an iron heated red-hot, it ſmoaks all away, leaving little or no aſhes thereon; and on the contrary, if that of the *Levant* be put upon the ſame iron, it will ſoon be converted the moſt part of it into a black and ſalt ſand, contracting itſelf in burning like worms, flaming a long time and yields a very white and ſtrong ſalt. The *Kali* therefore of the *Levant* is beſt of all, according to the ſentiments of moſt authors; and that which is found in *Egypt*, which has long leaves and very hairy, has no leſs vertue.

To extract the ſalt of Polverine, Rochetta, *and* Soda *for making glaſs.*

Thoſe who undertake to make glaſs, muſt begin by providing good *Rochetta* or *Soda*, to extract the alkali ſalt of it, which is the baſis or foundation of their work: the beſt, and that which contains moſt ſalt, may be tried by touching it with the tongue, and taſting what ſalt it contains; but the ſureſt way of all is to make an eſſay of them in a melting-pot, a thing common in this art, and which the workmen very well know.

To extract the ſalt of *Rochetta* or *Soda*, which is commonly in lumps, you muſt firſt reduce it into a fine powder: heretofore, ſtone mortars were in uſe for that end with iron peſtles; after which they ſifted it through a fine ſieve, and putting the pieces that remained in lumps behind into the mortar to be pounded again, and ſo till the whole was ſifted off; but at preſent we make uſe of mills, which do the buſineſs with more expedition and leſs charge; beſides this way, it is immediately reduced and ground to fine powder, which is notwithſtanding afterwards ſifted, and the lumps that remain put into the mill again, until all be ground into a fine powder: for in this conſiſts the art of extracting more or leſs ſalt.

And as ſalt cannot be extracted without the help of water, you muſt ſet up coppers with their furnaces like thoſe of the dyers, bigger or leſs, according to the greater or leſs quantity of ſalt you deſign to make; then you muſt fill theſe coppers with fair water, and make a fire with dry wood, that you may not be moleſted by ſmoak, and when the water begins to boil, you muſt put in ten pound of tartar calcined to a white colour, (for reaſons we will ſhew hereafter in the preparation of tartar,) to every hundred pound of *Soda* you put in, according to which proportion you are always to regulate yourſelf. Then you muſt ſtir it with a long wooden ladle, that it may diſſolve apace; after that, put in as much powder of *Rochetta* or *Soda* as it can contain, regulating yourſelf according to the greatneſs of your coppers, and the quantity of water in them. You muſt continue the fire, and ſtirring with the wooden ladle in the copper, till all the *polverine* is incorporated with the water, and the ſalt extracted quite out of it. The water being one third part boiled away, you muſt fill your coppers again with freſh-water, and continue to make them boil till half be conſumed; then the lye will be made, and the ſalt extracted.

Your lye thus being made, ſlacken your fire under the copper, and ſet in order as many earthen pans as you ſhall have occaſion for, to contain it; thoſe pans muſt be very well glazed, or firſt ſtand filled with common water for ſix days, then you muſt fill thoſe pans with the lye and aſhes together, with great braſs ladles; then let them ſtand ſo ſix days, that the aſhes may ſettle to the bottom, and the lye become clear. Then again pour that lye into other earthen pots, leaving the aſhes behind, and let it ſtand two days longer, and the lye will become very limpid and clear, for all the earthy fæces will precipitate, and ſettle at the bottom. You muſt continue to do ſo three times, to have a moſt clear and limpid lye, which will yield a very fine and perfect ſalt; you might avoid theſe three times ſifting it, if you filtered it off; but that would be too troubleſome, by reaſon of the great quantity of water you would have to filter.

The coppers being empty, if there remain yet any materials to extract the ſalt from, you muſt fill them again with water, putting in each ten pound of tartar, as before, and after that a proportionable quantity of *Polverine* or *Soda*, and continue to work as we have explained, till all the ſalt be extracted, after which you muſt waſh the coppers well with fair water, then fill them with the ſaid refined and clarified lyes in the pans, which you muſt cauſe gently to boil to evaporate the water, till it begins to thicken and ſhoot its ſalt, which it commonly does in about twenty-four hours time, ſo that the ſalt begins to appear on the ſurface of the copper all white. Then you muſt take a great ſkimmer full of holes, and put it down to the bottom, and the ſalt will fall upon it; which operation muſt be repeated, letting the lye all drop again into the copper, before you remove the ſkimmer from it; then you muſt put this ſalt into the ſame earthen pans you made uſe of before, the better to drain the lye that remains, which muſt be ſaved, and put into the copper again; then dry the ſalt: continue this work till all the ſalt be gotten out of the copper.

I muſt here acquaint the reader, that he muſt make a gentle and eaſy fire as ſoon as the ſalt begins to ſhoot, for fear the ſalt ſhould ſtick to the copper, which a great fire will cauſe it to do, and ſo burn it; which often happens to thoſe that don't take ſuch precaution.

This reaſon ought to oblige thoſe who work in this art, to procure veſſels well lined with lead, ſuch as they uſe to boil alum in; beſides, theſe lyes being ſharp and corroding, deſtroy and conſume the braſs by degrees, or the moiſture cankers it, and ſo it ſpoils the colour and beauty of the ſalt.

The ſalt in the earthen pans or pots being well drained, muſt be put into little wooden tubs or fats, the better to dry out all the moiſture, according to the ſeaſon wherein it was made; then beat it groſſly, and put it into a furnace moderately heated, there gently to dry. It being thus, take it out of the furnace and pound it in a ſtone mortar, or grind it in a mill, and afterwards ſift it through a fine ſieve, the holes whereof are not bigger than grains of wheat: this ſalt being thus prepared, ought to be kept in a dry and convenient place, where there is no duſt. See the articles FRIT and CRYSTAL.

The goodneſs of the ſalt depends very much on the tartar that is mixed in it, which ſerves not only to make the quantity the greater, by attracting more ſalt from the matter, but alſo to make it whiter too, and alſo makes the cryſtal whiter and more tranſparent; and by its means we commonly get 80 or 90 pound of ſalt from 300 pounds of good ſalt of *Polverine* of *Levant*, without which it could not be done.

Tartar is made by wine; it ſticking round about the hogſheads and pipes in little hard lumps, and never amongſt the lees of the wine, which are always moiſt and at the bottom; that of red wine is extraordinary for this uſe, containing much more ſalt, and that more ſharp than the tartar of white wine.

It muſt be calcined for the ſpace of ſix hours, in the ſecond ſort of furnace we have mentioned, in a moderate heat, that all heterogeneous parts may be conſumed, and that it may become whiter, and more eaſily diſſolvable in water. Experience teſtifies that this way of calcining *tartar*, is better than when leſs time is beſtow'd on it.

The ſecret manner ſome chymiſts proceed herein, ſhews us of how great importance it is for the *tartar* to be thoroughly dried; they powder it groſly, afterwards gently calcine it, or rather dry it in the furnace, on tin ſhovels, which makes it cream better than any other way.

By this preparation the *tartar* more thoroughly diſſolves in the water, and you extract more eaſily, and in greater quantity, the ſalt of the *polverine*, or powder of *rochetta* or *ſoda*, for it opens the body of it; and by penetrating into it, becomes united perfectly with it, which would not otherwiſe arrive ſo well.

After the ſame manner the body of *nitre*, in making *aqua fortis* or ſpirit of ſalt, is opened by the alum and vitriol; it is for this reaſon alſo, that we have taught to diſſolve the tartar in the water in the furnace, before you put in the *polverine* or *ſoda*.

Another way to extract the ſalt of Polverine, *or* Rochetta, *which makes cryſtal as fine and tranſparent as natural* (*or rock*) *cryſtal.*

This way of extracting the ſalt of *polverine* is far more laborious and troubleſome than that taught before, and yields leſs ſalt, but it makes a very noble cryſtal, nay, finer than the natural; ſo that it is fit for the fineſt, moſt nice, and exquiſite uſes. To make it,

Take *polverine* of the *Levant* well ſearced, and put it into glaſs cucurbits, or bodies luted at the bottom, to the height of four inches; fill them with common water that is very clear, put them on a ſand furnace, or one of aſhes, and let them have a moderate heat for ſome hours, 'till half the water be evaporated; after that, you muſt put out the fire, and let them cool; then decant off the water gently into glaz'd earthen pans.

Then pour freſh water on the *polverine* that remains in the bodies, and let it digeſt as before, on a ſand-furnace, in a moderate heat; and repeat this 'till the water has extracted all the ſalt, which will appear to the eye, when the water is void of all colour; and to the taſte, when it is no longer ſaltiſh.

Then take theſe lees, and filtre them into other glaz'd pots, and let them ſtand five or ſix days, that whatever is earthy in them may ſettle to the bottom; then filtre theſe lees again, then they will be purified, and ſeparated from moſt part of their earthy matter.

After the lees are thus purified, put them again into glaſs bodies, luted at the bottom, as before; and ſet them in a furnace of ſand, or aſhes, there to evaporate all the water over a gentle heat; taking notice, that when the matter begins to dry, you muſt ſtill make the fire more gentle, for fear the ſalt ſhould be burnt.

This ſalt being dry, you muſt take it out of the cucurbits or bodies, and examine whether they are crack'd or not, which often happens by reaſon of the ſtrength of the ſalt: in that caſe you muſt put the ſalt into other cucurbits, luted at the bottom as the former, and fill them again with common water, and place them again, as before, in a furnace of ſand or aſhes, with a gentle fire to diſſolve the ſalt, and that 'till an eighth part of the water be evaporated; then put out the fire, and let it cool; then empty this water, impregnated with the ſalt, into glaz'd earthen pans; and let it ſtand 24 hours, afterwards filtre it diligently, that it may be the better purified, and ſeparated from its *fæces*, and the reſt of the dregs or terreſtrial particles.

Then you muſt again put theſe filtred lees into the ſame cucurbits, if they are not crack'd, and if they are, into others; then put them on the furnace to evaporate the water over a gentle fire, which you muſt ſtill make more gentle, when it is almoſt evaporated, and the ſalt begins to dry, leſt it ſhould burn.

Then after it is dry, pour upon it freſh water to diſſolve it, then filtre it again as above, and reiterate theſe proceſſes 'till the ſalt be perfectly purified, and there remain no *fæces* or earthy matter.

With this ſalt and ſome very white *tartar*, ſearced to an impalpable powder, may be made ſo fine and tranſparent a cryſtal, that it will ſurpaſs the natural, as has been ſaid.

POMEGRANATE BLOSSOM; to colour this, lay on *mine de plomb*, *vermilion*, and *carmine*, and finiſh with *carmine*.

Let the green be *verditer* and *maſticote*, and ſhade with *iris*.

GIACOMO PONTE DA BASSANO IL VECCHIO, was ſcholar to his father *Bonifacio*, ſtudied *Titian* and *Parmegiano*; born in the yeaar 1510, liv'd at *Baſſano* and *Venice*, excell'd in hiſtory, animals, landſcape and portraits, died in 1592, aged 82 years.

PORTRAIT } Is the repreſentation of a perſon, and
PORTRAITURE } eſpecially a face, done from the life.

And in this ſenſe we uſe the term *portrait-painting* in contradiſtinction to *hiſtory-painting*, where all reſemblance of perſon is diſregarded.

Portraits are uſually painted in oil-colours, ſometimes in water-colours, ſometimes in miniature with crayons, pens, paſtils, *&c.*

POSTURE [in *Painting* and *Sculpture*, &c.] is the ſituation of a figure with regard to the eye; and of the ſeveral principal members thereof, with regard to one another, whereby its action is expreſs'd.

A conſiderable part of the art of a painter conſiſts in adjuſting the *poſtures*, in giving the moſt agreeable *poſture* to his figures; and in accommodating them to the characters of the reſpective figures, and the part each has in the action; and in conducting and purſuing them throughout.

Poſtures are either *natural* or *artificial.*

Natural poſtures are ſuch as nature ſeems to have had a view to, in the mechaniſm of the body; or rather ſuch as the ordinary actions and occaſions of life lead us to exhibit, while young, and the joints, muſcles, ligaments, *&c.* are pliable.

Artificial poſtures are thoſe, which ſome extraordinary views or occaſions lead us to exhibit: ſuch *e.gr.* are thoſe of our *poſture-maſters.*

POTTERY is the art of making earthen pots and veſſels, or the manufactory of earthen ware.

The *wheel* and lathe are the chief, and almoſt the only inſtruments us'd in *pottery:* the firſt for large works, and the ſecond for ſmall; altho' in truth they are much the ſame as to the manner of uſing them.

The potters wheel conſiſts principally in the nut, which is a beam or axis, whoſe foot or pivot plays perpendicularly on a free-ſtone ſole or bottom.

From the four corners on the top of this beam, which does not exceed two foot in height, ariſe four iron bars, call'd the ſpokes of the wheel; which forming diagonal lines with the beam, deſcend and are faſtened at the bottom to the edges of a ſtrong wooden circle, four foot in diameter, perfectly like the felloes of a coach-wheel, except that it has neither axis nor radii; and is only join'd to the beam, which ſerves it as an axis by the iron bars.

The top of the nut is flat, of a circular figure, and a foot in diameter. On this is laid a piece of glaz'd earth to be turn'd and faſhioned.

The wheel thus diſpos'd, is encompaſs'd with four ſides of four different pieces of wood, ſuſtain'd on a wooden frame; the hind piece, which is that whereon the workman ſits, is made a little inclining towards the wheel; on the fore-piece are plac'd the pieces of prepar'd earth. Laſtly, the ſide-pieces ſerve the workman to reſt his feet againſt, and are made inclining, to give him more or leſs room, according to the ſize of the veſſel to be turn'd.

By the ſide of the workman is plac'd a trough of water, wherewith from time to time he wets his hands, to prevent the earth's ſticking to them.

In *uſing the wheel*; the earth being prepar'd, and a piece of it ſuitable to the work intended, laid on the top of the beam; the workman ſits down, his thighs and legs being much expanded, and reſting his feet on the ſide-pieces, as is moſt convenient.

In this ſituation the wheel is turn'd round, 'till it has got the proper velocity; when wetting his hands in the water, he bores the cavity of the veſſel, continuing to widen it from the middle; and thus turns it into form, the wheel turning afreſh, and he wetting his hands from time to time.

When the veſſel is too thick, he uſes a flat piece of iron, with a hole in the middle, and ſomewhat ſharp on the edge, to pare off what is redundant.

Laſtly, when the veſſel is finiſhed, it is taken off from the circular head, by a wire paſs'd underneath the veſſel.

The *potters lathe* is alſo a kind of wheel, but more ſimple and ſlight than the former; its three chief members are an iron beam or axis three foot and a half high, and two inches in diameter; a little wooden wheel all of one piece an inch thick, and ſeven or eight in diameter, placed horizontally at the top of the beam, and ſerving to form the veſſel on; and another larger wooden wheel all of a piece, three inches thick, and two or three foot broad, faſtened to the ſame beam at the bottom, parallel to the horizon.

The beam or axis turns by a pivot at the bottom in an iron ſtand.

The workman gives the motion to the lathe with his feet, by puſhing the great wheel alternately with each foot, ſtill giving it a greater or leſſer degree of motion, as his work requires.

They work with the *lathe* with the ſame inſtruments, and after the ſame manner as the wheel.

But neither the one nor the other ſerve for any more than the forming the body of the veſſel, *&c.*

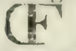
The feet, handles, and ornaments, if there be any beſides the mouldings, being to be made, and ſet on by hand; if there be any ſculpture in the work, it is uſually done in earthen or wooden moulds, prepar'd by a ſculptor, unleſs the potter is artiſt enough to do it himſelf, which is very rare.

As to the glazing or varniſhing of the work, this is uſually done with mineral lead, *i. e. lead* pulveriz'd by throwing charcoal-duſt into the melted lead, and the aſhes of lead, which in effect are only its ſcum and ſcoria.

POVERTY is repreſented in *Painting*, &c. by a woman in a ſorry habit, has her right hand faſtened to a heavy ſtone, and expanded wings on her left, as if ſhe was ready to fly up.

The wings ſignify the deſire to aſcend to the higheſt pitch of knowledge, but the ſtone hinders the ſoaring, and they are obliged to ſtay in their abject ſtate, and become a laughing-ſtock to the world.

NICHOLAS POUSSIN, *of noble deſcent*, born in 1594, ſtudied at *Paris* and *Rome*, practiſed after *Dominichino*, and the antique after *Flammingo*, lived at *Rome*, excelled in hiſtory and ſmall figures, died in 1665, aged 71 years.



FRANCIS DU POYLLI, an engraver, who wrought for ſeveral maſters, uſed this mark.

PRACTICE is repreſented in *Painting*, &c. by an old woman, her head inclined, a pair of compaſſes in one hand, and a rule in the other, ſhe is dreſſed in a ſervile manner.

Her down looks denote her regarding only that part we tread on, and abject things, as appears by her robe; theory does not doat on cuſtom, but relies on the true knowledge of things; the compaſſes denote reaſon neceſſary for the due conduct of affairs; the rule, the meaſure of things, eſtabliſhed by common conſent.

PRAISE is repreſented in *Painting*, &c. by a fair lady all in white, wearing a jewel of jaſper at her breaſt, crown'd with a garland of roſes, holds a trumpet in her right hand, out of which iſſues great ſplendor, her left arm extended, and ſeems to point at ſome particular perſon.

Handſome, becauſe our ears are delighted with nothing more than *praiſe*; the jaſper and roſes denote *praiſe*, for thoſe who wear them get all mens favour and applauſe; the trumpet, reputation of thoſe who deſerve *praiſe*; ſhe points at ſomebody praiſe-worthy.

PRAYER is repreſented in *Painting*, &c. by an old woman in a white mantle, looking up to heaven, kneeling; in one hand a fuming cenſor, a heart in the other, a cock on the ground.

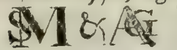
Kneeling denotes her being conſcious of her failings; her mantle, that prayer ought to be in ſecret; the heart ſhews that if it pray not, lip-labour is in vain; the incenſe-pot, is a ſymbol of prayer; the cock denotes vigilance.

PRECEDENCE is repreſented in *Painting*, &c. by a majeſtick woman, having a wren on the crown of her head, and oppoſes an eagle with her right hand, to prevent its ſoaring aloft to diſpatch its rival.

The wren amongſt the *Romans* was called king of birds, and *Ariſtotle* ſays, the eagle often contends with it, as not enduring ſhe ſhould have the preeminence, which cauſes the antipathy between them.

FRANCISCO PRIMATICCIO *Bologneſe*, born in the year 1490, ſcholar of *Gio Romano*, lived in *Bologna*, *Mantua*, and in

France, excelled in hiſtory-painting and architecture, died in the year 1570, aged 80 years.



Theſe two marks are in 12 pieces, copied from the paintings of the chapel of *Fontainbleau*; on one ſide is the firſt mark, ſignifying *S. Martin of Bologna*, who was *Franciſco Primaticcio*, called abbot of *St. Martin's*; on the other ſide is the ſecond mark, which ſtands for *Anthony Guernier*, the engraver.

He alſo uſed other marks, as you will find elſewhere.

PRINTING is repreſented in *Painting*, &c. by a woman in a white chequered habit, with the letters of the alphabet on it, holds a trumpet in one hand, round which is a ſcroll inſcribed UBIQUE, and in the other the ſempervive, or houſeleak, with the word *ſemper*; a printing-preſs by her, with ſome implements.

White ſhews the impreſſion ſhould be pure and correct; chequered, to ſignify the little boxes for the letters; *ubique* ſignifies its being famous every where.

A RED-INK *for making an* IMPRESSION *of a* PRINT.

Mix ſome *vermilion* finely ground, with *linſeed-oil*, but ſo liquid that it will run or flow in a pen, and with this trace the lines of a print; and as ſoon as you have done all, with a ſpunge and water wet the back ſide of the print, and turn the printed ſide downwards upon a piece of white paper, ſo that it may lie ſmooth; then lay over that a piece of dry paper, and preſs it hard on every part, and the lower white paper will receive the impreſſion: but if you have a preſs, ſuch as is uſed for preſſing linnen, it will be better to put the paper between two of the wooden leaves, and then to ſcrew the preſs as tight as may be, for then you will have a fine impreſſion.

PRODIGALITY is repreſented in *Painting*, &c. by a woman hoodwinked, of a ſmiling countenance, holding a cornucopia with both her hands, out of which ſhe ſcatters gold and other precious things.

Blind, to ſhew they are ſo who ſpend and ſquander away their ſubſtance, without reaſon, to thoſe who are unworthy of it, for the moſt part obſerving neither rule nor meaſure.

The PROPORTIONS *of a* HUMAN *Body*.

1. The length of an upright body is equal to eight times the length of the face or head: the arm hanging ſtrait down, reacheth within a ſpan of the knee: the length of the hand muſt be the length of the face: the arms extended muſt be the juſt length of the body.

2. Thoſe parts which are near the eye muſt be made larger and longer than thoſe that are farther off (becauſe the eye judgeth ſo of them) and according to the diſtance from the eye,

ſo muſt you vary from that which is otherwiſe the real true proportion of thoſe.

It is ſcarce poſſible to do any thing in the art of *Proportion* commendably, without the knowledge of *Arithmetick* and *Geometry*; wherefore the knowledge of theſe ſciences is required, as what is abſolutely neceſſary: for how otherwiſe ſhould any one underſtand the exact meaſure and proportion of a body?

3. *To make a ſide-way head.*

Firſt, form an equilateral triangle, in what poſition you pleaſe, turning the triangle, you make the face upon one of the three ſides, be it which it will, either upwards or downwards, higher or lower, dividing that ſide into three equal parts, the *one* to ſerve from the lower part of the *hair* to the lower part of the forehead; the *ſecond*, from thence to the upper part of the noſtrils; the *third*, from thence to the lower part of the chin.

4. Theſe three lines being formed, or drawn, draw with your black-lead pencil, coal, or chalk, a faint crooked ſtroke, which may reach from the top of the forehead to the eyebrow, from whence draw the ſlope line, bending at the end.

To make the noſe (either long or ſhort, groſs or thin, as you deſire it) let it end at the ſecond diſtance, where the noſtrils are to end.

5. Then ſubdivide the remaining third part in the midſt, where the mouth ſhall be placed for the parting of the upper and under lips; then frame the chin, having reſpect to the perpendicular line, that it fall not out of the middle of the chin, adjoining thereto, the under chin down to the throat or gullet.

6. With the other two dividing lines (the one from the top of the forehead downwards, ending in the midſt of the back part of the ear; and the other proceeding upwards from the chin, aſcending, till it meets with the ſuperior deſcending line) guide yourſelf in deſcribing the ear, taking heed that its circumference ſtretch not out too far about the upper part of the forehead.

7. Deſcribe a great circular line, by which from the roundneſs of the head to the nape of the neck, obſerving the natural proportion, and from thence downwards the reſt of the neck. Obſerve alſo, that the tip of the ear exceeds not the lower part of the noſtril.

To deſcribe the fore-right face.

Form a perfect oval, which divide in the midſt by a line the longeſt way, (*viz.* a perpendicular line) which divide into three equal parts, allowing the fourth of one of the three parts for the hair on the forehead; ſo you have the firſt third part for the forehead and hair, the ſecond third part for the noſe, and the third third part for the chin.

2. The mouth is to be formed in the midſt of this; always remembring that the eyes muſt be in one line; the croſs lines of the noſe and mouth muſt always be correſpondent to the croſs line where the eyes are placed; the eyes muſt be the length of one eye diſtant from another, and let their inward corners be exactly perpendicular over the outſide of the noſtrils.

To make the ears, they muſt be much foreſhortened, by foreſhortening, *viz.* for that the eye doth not ſee their extended latitude; it muſt be abbreviated or drawn in, and the length of the ear muſt be from the eye-brows to the bottom of the noſtril; then deſcribe the neck with the hair, according to their natural ſituation.

To draw a HEAD *foreſhortened.*

1. Make a circular draught (much like that in a fore-right face) with the aſpect upwards or downwards, as in the fore-right head, where the tranſverſe lines are ſtrait, but theſe are drawn circularly,

2. If the head flies upwards, the traced ſtrokes and the diviſions muſt aſcend or riſe upwards; but if it looks downwards, then they muſt all deſcend downwards, with this caution, that the ears and eyes fall not out of their due points, as you may ſee in the example.

3. In *foreſhortening*, you muſt take things as they appear to the eye, and not to draw the full proportion of each part; but to ſhorten all according to the *ratio* or proportion, which they are obfuſcated.

If you make a ſide face without any preſcribed meaſure or triangle; you ought however to conſider in your mind the natural diſtances and proportion, and by drawing many without a rule or limit, you will eaſily do it by the eye; and your hand will draw all things right by cuſtom.

And thoſe firſt ſtrokes or draughts being taken from the life, and reduc'd by the pencil with colours, you will find it very correſpondent and alike, and as exact as you can deſire it.

PERSPECTIVE PROPORTION is to be judg'd according to the diſtance of the eye from the thing view'd, as if one part of the body comes nearer to the eye than another, it is to be repreſented *in drawing*, &c. ſo much bigger than the other part of the body, which trends away from the eye: as if one leg ſtands behind another, the foremoſt coming firſt to the eye, muſt be made ſomewhat bigger and longer than the other, becauſe the eye judgeth ſo of it.

And in like manner you are to obſerve the ſame rule in any other part of the body, that the proportion muſt be leſſened according to the diſtance that it is from the eye; which notwithſtanding cannot be much in a principal figure.

But this rule is more nicely to be obſerv'd in ſtately palaces, cathedral churches, or ſuch like edifices, where there is a great variety by reaſon of their greater diſtances.

As alſo many times many figures ſtand far remote from the eye, and ſome nearer, which you are to take ſpecial notice of, that you expreſs thoſe that are far off at a diſtance, not too big nor plain. See the ſeveral articles in PERSPECTIVE.

PROSPERITY is repreſented [in *Painting*, &c.] by a woman richly clad, in one hand a cornucopia heaped up with money, in the other an oak-branch with acorns and violets upon her head.

The horn of plenty filled denotes money neceſſary to lead a proſperous life, the oak long life abſolutely neceſſary to it, as do the purple violets that always produce flowers.

MARCELLO PROVENZALE *da* CENTO, the ſcholar of *Paulo Roſſeti*, liv'd at *Rome*, excell'd in hiſtory, and in Moſaick works ſuperior to any, died in the year 1639, aged 64 years.

PRUDENCE is repreſented [in *Painting*, &c.] by a woman with two faces, a gilded helmet on her head, a ſtag by her, a looking-glaſs in her left hand, in her right an arrow, and a remora fiſh twiſted about it.

The helmet ſignifies the wiſdom of a prudent man, to be armed with wiſe council to defend himſelf, the ſtag ſhewing that we ſhould ruminate before reſolving on a thing, the mirror bids us examine our defects by knowing ourſelves; the remora that ſtops a ſhip, not to delay doing good when the time ſerves.

P.S.F. ſtands for *Peter Stefanoni fecit*; this artiſt engrav'd *Caracci's* works.

PURPLE is a red colour bordering on violet, made principally with cochineal or ſcarlet grain.

Purple was in high eſteem among the ancients, eſpecially the *Tyrian purple*, which paſs'd through more dyes than the reſt; and which colour was in a manner almoſt peculiar to kings and emperors.

Yet this *purple* did not exceed that now in uſe; the chief reaſons why the former has been diſus'd, are, that our modern *purple* is not only cheaper, but finer.

The ancient or *Tyrian purple* was tinged or dyed with the blood of a teſtaceous ſhell-fiſh, which the *Latins* call *purpura*.

There is now found about *Nicoya* in the *Spaniſh Weſt-Indies* a ſhell-fiſh, which perfectly reſembles the ancient *purpura*, and is in all probability the very ſame.

Gage relates of this fiſh, that it uſually lives ſeven years; that it hides itſelf upon the approach of the dog-days, and continues hid for 300 days running.

Theſe fiſhes are gather'd plentifully in the ſpring, and by rubbing one againſt another, yield a kind of ſaliva or thick glair, reſembling ſoft wax; but the *purple* dye is ſaid to be in the throat of the fiſh, and the fineſt part in a little white vein; the reſt of the body is of no uſe. He adds, that the chief riches of *Nicoya* conſiſts in this fiſh.

Cloth of *Segovia*, dyed with this *purple* liquor, is ſold for 20 crowns the ell, and is worn by none but the greateſt *Spaniſh* Lords.

Beſides the *Weſt-Indian* purple fiſhes, we have others much nearer home; and Mr. *W. Cole* did in the year 1686, diſcover purple fiſhes on the coaſts of *Somerſetſhire*, *South-Wales*, &c. where they were found in great abundance, as we find in the *Philoſophical Tranſactions*.

Mr. *Reaumer* obſerves, that this fiſh is a kind of *buccinium*, by which name the ancients call'd all thoſe ſhell fiſhes, that bear any reſemblance to a hunting-horn; and, as *Pliny* relates, the ancient *purple* was taken from this kind of ſhell-fiſh.

The author deſcribes the method of obtaining the colour as follows; they break the ſhell, which is very hard, holding the mouth of the fiſh downwards, ſo as not to cruſh the body; and pick off the broken pieces, and then there appears a white vein, lying tranſverſly in a little furrow or cleft, next the head of the fiſh.

In this vein is the *purple* liquor lodg'd; ſome of which being laid on linnen, appears at firſt of a light green colour; but if expos'd to the ſun, ſoon changes into a deep green, and in a few minutes more into a ſea-green, and in a few more into a blue; thence it ſoon becomes of a *purpliſh* red, and in an hour more of a deep *purple* red.

And here the action of the ſun ends; but it becomes of a moſt bright, beautiful crimſon, by being waſh'd in ſcalding water and ſoap, which will bear waſhing admirably without any ſtyptick.

Mr. *Reaumer* has diſcovered another very different kind of *purple*. This, he ſays, is produc'd in oval grains about a quarter of an inch long, and one inch thick, full of a white liquor, bordering on yellow, which cover certain ſtones or ſands, about which the fiſh call'd *buccina* of *Poictou* in *France* uſually aſſemble.

Theſe he ſuppoſes to be the eggs of ſome unknown fiſh.

Theſe grains being bruis'd on a white linnen cloth, at the firſt only tinge it yellow, and that inſenſibly, but in three or four minutes turn to a very beautiful purple red; provided the linnen be expos'd to the open air; for the air of a room, altho' the windows be open, will not produce this effect.

This colour will fade a little by repeated waſhings.

There is likewiſe a *purple* fiſh about the *Caribbee* Iſlands; this fiſh is call'd *Burgan*, being much about the ſize of the end of a finger, and in ſhape like our periwinkles: the ſhell of it is of a browniſh azure, the fleſh white, the inwards of a very bright red, the colour of which appears through the body; and it is this that dyes the froth, which it caſts forth when taken, and which at firſt is of a violet hue, bordering on blue.

To cauſe theſe fiſh to yield the greater quantity of froth, they lay them on a plate, ſhake and beat them one againſt another; upon which the plate is immediately cover'd with the froth, which they receive on a linnen cloth, and as it dries becomes *purple*.

P. *Labat* obſerves, that this colour is found to dwindle and diſſipate in proportion as the linnen that is dyed with it is waſh'd.

The ſame author gives us alſo the deſcription of another *purple* dye, produc'd by a plant that grows in the *Antilles* iſlands: the juice of this tree, when cut, he ſays, is of a blood-red colour, and communicates the ſame colour to cloths; tho' like the former it loſes much in waſhing.

A tranſparent PURPLE.

This may be made either *redder* or nearer the *blue*, as you would have it, by boiling four ounces of raſp'd *Braſil* wood in a pint of pale ſtale beer, and half an ounce of *logwood* or *Campeachy wood*, 'till the liquor is heightened to the colour you deſire, which may be known by dipping a piece of paper in it.

If you find it too red, add a quarter of an ounce of *logwood* to the *Braſil* wood, and it will be much nearer to the purple than the former; and by this method you may humour it to any degree of *purple*, by putting in either more or leſs *logwood* to the former compoſition, and fixing the colour with *alum*.

This will produce ſuch clear *purple*, as no mixture of *ſolid reds* and *blues* will produce, and the receipt has been for a long time kept ſecret.

Madam *Mariana* of *Amſterdam*, famous for painting in *miniature*, and her excellent manner of illuminating prints, ſays that the beſt *purple* that can be made, may be compos'd between the *carmine* and *indigo*; to ſtrengthen which on the red ſide, you may add *lake*, between the lighter and darker part: and ſo *lake*, when it is us'd in the ſame way, on the foregoing *purple*, or the *liquid crimſon*, produces a very fine effect.

The colour of the *purple* may be varied, and made either redder by putting more *carmine*, or bluer by uſing more *indigo*; which being mix'd on a white *Dutch* tile, will ſhew itſelf.

To dye ſtuffs, &c. *a* PURPLE.

Allow a ſufficient quantity of fair water to every pound of ſtuff, one pound of *tartar*, and two ounces of *alum*; in which boil the cloth for an hour; then take it out, cool and rinſe it; after this warm ſome clean water, into which put in three ounces of *Braſil* wood; boil it half an hour, and then work the ſtuffs in it, 'till it becomes as red as deſired: upon which, take them out, and put into the dye two ounces of *pot-aſhes*; ſtir it well about, and put in the red ſtuff once more; roll it off and on the roller, that it do not ſpot; then cool, and rinſe it out.

Another Purple.

Firſt blue the ware in the ſuds, which has been wrought 'till it turn to a ſort of a half green, and then boil'd for three quarters of an hour with twelve ounces of *aqua fortis*, half a pound of *ſal-armoniac*, two pound of *white-wine tartar*, two pound of *roach alum*, and afterwards rinſed out.

To finiſh it; proportion your ſuds to thirteen pound of goods, and take ten ounces of *cochineal*; and if you think that quantity will make it too red, you may correct it with an ounce of *pot-aſhes*, and an ounce and half of *lac*.

If the *aqua fortis* be tempered, or the work perform'd in a tin kettle, or leſs *ſal armoniac* us'd, the colour will incline more to a blue.

To dye ſtuffs of a laſting purple dye.

The ſtuff, when white, ought to be very clean and free from all ſpots and ſtains, that the ſtuff may have the better luſtre when dyed.

The blue. The ſtuff muſt firſt be dyed to the depth of a ſky-colour with *woad* or *indigo*, and then dried.

The browning or deepening. Boil half a pound of *Braſil*, and divide it into four parts, as is done in the *violet brown dye*, and is to be dyed time after time in the ſame manner: to the firſt part of the *Braſil*, add one drachm of *ſalt-petre*, and one drachm of *ſal-armoniac* powder; to the ſecond, add a quarter of an ounce of powdered *galls*, and half an ounce of *Paris* red, which is a ſort of baſtard *ſandarach*; to the third a quarter of an ounce of *galls*, and a quarter of an ounce of calcin'd *tartar*, and of *alum* and *ſalt-petre*, each a drachm.

The fourth time, a quarter of an ounce of *galls* powdered, as much *turmerick*, and a quart of ſharp lye, and you will have a beautiful colour.

To dye SILK *a ſlight ſort of purple.*

Clap the *ſilk* into the ſlighter red dye; but increaſe the quantity of *pot-aſhes*, to turn it to *purple*, then rinſe and dry it.

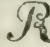
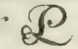
To dye thread of a PURPLE *colour.*

Firſt *alum* the thread with three pound of *alum*, half a pound of *tartar*, and two ounces of *Braſil*, dry it, and draw it through the *woad* or *indigo* dye, then rinſe it clean, and dry it again; then to brown or deepen it, take twelve ounces of *Braſil*, being firſt boiled, which liquor divide into three parts, to be us'd at three times.

To the firſt add half an ounce of *Paris red* (a ſort of *ſandarach*) one drachm of *maſtick*, and a quarter of an ounce of calcin'd *tartar*; always drying the thread, after you have us'd every one of the parts of the liquor. The ſecond time add half an ounce of *turmerick*, two drachms of *cinnabar*, and half an ounce of *gum Arabick*. The third time, when the thread becomes reddiſh, add a quart of ſharp lye, and by this means the thread will be dyed of a laſting colour.

Q.

QUARTATION is a method of purifying gold, by melting three parts of ſilver with one of gold; and then caſting the mixture into *aqua fortis*, which diſſolving the ſilver, leaves the gold at the bottom in the form of a black powder; this operation more commonly is call'd *parting* and *depart*.

 or  PETER QUAST us'd theſe two marks, making a P and Q and at other times his mark was *P Quaſt*, as in certain groteſque pieces.

To harden QUICKSILVER.

Caſt lead ſeparated from its droſs into a veſſel, and when it begins to cool, thruſt in the point of a ſtick, then take it out and caſt in the *quickſilver*, and it will congeal: then pound it in a mortar, repeating this ſeveral times; and when it is hard, melt it often, and put it into fair water, doing it ſo long, 'till it is hard enough; then being all in a piece, boil it in linſeed oil, for the ſpace of ſix hours, and it will become malleable, and will be hammered.

To fix Quickſilver, *being hardened.*

This may be done by laying it in a crucible with powder of glaſs, layer upon layer, covered and luted, and by heating it all over red-hot, and then melting it.

To make Quickſilver *malleable.*

Firſt harden the *quickſilver*, according as before directed, then break the metal into ſmall pieces, and boil it for a quarter of an hour in ſharp vinegar; then add a little *ſal-armoniack*, and digeſt all together for ten or twelve days; then boil all together in a well-luted crucible, 'till it is red-hot, and by degrees crack'd.

Laſtly, hang the *quickſilver* in a pot with brimſtone at the bottom, cover it, lute it, and ſet it into the fire, that it may grow hot by degrees, and receive the fume of the ſulphur; do this for a month, once a day, and the *quickſilver* will run and bear hammering.

To tinge Quickſilver *of the colour of gold.*

Having hardened it, break it into ſmall pieces, and put it into a crucible with the powder of *Cadmia*, layer upon layer, mixed with the peels of pomegranates, turmerick powdered finely, and raiſins; cover the crucible, and lute it well, and ſet it on a fire for ſix or ſeven hours, that it may be red-hot; then blow it with bellows 'till it run, then cool it while it is covered with coals, and it will be of the colour of gold.

Another way of tinging QUICKSILVER.

Take of purified *mercury* two ounces, *ſulphur* four ounces, *aqua fortis* ſix ounces, let them all ſtand 'till the water grow clear; then diſtil it with its ſediment, and at the bottom of the limbeck, you will find the *mercury* hard, and of the colour of gold.

To order QUILLS.

If a gooſe quill be too thick or hard, ſcrape it to a proper thickneſs with the back of your pen-knife; then wet it with ſpittle, and roll it in the ſcrapings, and they will ſtick to it; then rub it bright with a piece of woollen cloth, or lappet of your coat.

If the quill be ſoft, put the head of it into ſoft aſhes, keeping it ſtirring 'till it is ſoft, (you may alſo preſs it almoſt flat on your knee while hot, with a back of a pen-knife, and afterwards with your finger reduce it to a roundneſs) and it will harden it, and when it is cold, you may make your pen.

If you have a number of quills to harden, which makes them ſlit the better; ſet water and alum over the fire, and while it is boiling, put a handful of quills, the barrels only, in for a minute, and lay them by.

Or they may be put into a pot of hot ſand, and taken out and flatted, *&c.* (as before) then the skin rubb'd off with a piece of fiſh-ſkin, which will not only harden, but render them clear and poliſh'd.

To colour the barrels of QUILLS *red.*

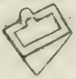
Take a pint of *vinegar*, put into it half an ounce of *alum* powdered, *vermilion*, and the fine ſcrapings of *Braſil* wood, of each one ounce; boil them 'till the liquor begins to thicken; then ſtrain it, and put the liquor into a narrow deep skillet, and when it boils, hold the barrels of the quills in the liquor, until they change their colour, and this will harden them alſo.

To tinge them *yellow*, you may uſe a pennyworth of *ſaffron*, and an ounce of *turmerick* alſo in powder.

R.

R. Is the mark of *Ravignano*, and underneath R. V. I. i. e. *Raphael Urbino* inv.

RAGE [in *Drawing*, &c.] may be repreſented with the ſame motions as *Deſpair*, but yet more violent; for the face will be almoſt quite black, covered with a cold ſweat, the hair ſtanding up an end; the eyes wandering, and in a contrary motion; the eye-balls ſometimes rolling towards the noſe, and ſometimes backwards towards the ears; all the parts of the face will be extremely marked and ſwell'd.

MF *or*  MARK ANTONIO RAIMUNDI *of* Bologna, call'd of *France Raphael Urbin* engraver, his marks; which pieces he mark'd with the letters R S. M. F. intimating by the two firſt letters *Raphael Sancio*, by the two laſt *Marco Francia fecit*.

He likewiſe us'd other marks, *i.e.* B. S. ſignifying *Bononienſis ſculptor*.

In his plates copied from *Buonaroti*, he put MI. AG. FLO. *i.e. Michael Angelus Florentinus*; and afterwards for his own mark he us'd that of *Mantegna*, which may alſo ſignify *Marcus Antoninus fecit*.

In the life of *Chriſt* engraven by him, and copied from the plates of *Albert Durer* of *Venice*, he mark'd the leaves with *Albert Durer*'s mark.

The RANUNCULUS. Of this flower there are many ſorts, the fineſt of which are *reddiſh* and *orange* colour'd: for the firſt of theſe uſe *vermilion*, with a very ſmall quantity of *gambooge*; add *carmine* to ſhade with, and finiſh with this laſt colour, and a little *gall-ſtone*.

For others uſe *Indian lake* inſtead of *carmine*; but eſpecially at the heart.

The *orange* colour may be imitated with *gambooge*, finiſh'd with *gall-ſtone*, *vermilion*, and a little *carmine*, leaving ſome yellow ſtripes or ſpots.

The green of the ſtalks may be done with *verditer* and *maſticote*; to which muſt be added *iris* green for ſhading: the leaves muſt be of a deeper *green*.

RAPTURE }
RAVISHMENT } If admiration is caus'd by an object above the comprehenſion of the ſoul, as the power or greatneſs of God, then the motions of rapture will be different from that of veneration.

For the head will be bowed towards the heart, the eye-brows rais'd, and the eye-balls lifted up.

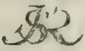
The head ſo bowed ſeems to mark the humility of the ſoul.

For this reaſon alſo, neither the eyes nor eye-brows are drawn towards the glands, but lifted up towards heaven, where they ſeem fix'd to diſcover what the ſoul cannot underſtand.

The mouth is open, having the corners a little rais'd, which intimates a kind of extacy. *See the Plate.*

If on the other hand, the object that cauſes our *admiration* have nothing in it deſerving our eſteem, this want of eſteem will produce ſcorn.

This paſſion or affection may be alſo further expreſs'd by the body thrown backwards, the arms lifted up, the hands open, and the whole action ſhall ſhew a tranſport of joy. *See the plate.*



SILVESTRA DA RAVENNA, ſcholar and imitator of *Marc Antonio* from 1535 to 1560. He employ'd himſelf wholly in engraving the pieces of *Raphael* and *Julio Romano.*

R. B. T. A. ſtands for *Robetta.*

REALGAL } A mineral, a kind of red arſenick, differing
RISALGAL } from the common arſenick, which is white, and from orpiment, which is yellow.

REASON is deſcrib'd [in *Painting*, &c.] armed like *Pallas*, upon her helmet a crown of gold, a drawn ſword in her right hand, a lion bridled in her left, before her ſtomach a breaſtplate with the numeral cyphers.

The crown teaches that reaſon alone can bring valiant men upon the ſtage, and into credit; the ſword intimates the extirpating vice that wars againſt the ſoul; the bridle, the command over wild paſſions; the cyphers, that as by them real things are proved, ſo by reaſon we acquire thoſe that relate to the common welfare.

RED is one of the ſimple or primary colours of natural bodies, or rather of the rays of light.

The *red* rays are thoſe of all others the leaſt refrangible.

Hence, as Sir *Iſaac Newton* ſuppoſes the different degrees of refrangibility to ariſe from the different magnitudes of the luminous particles, of which the rays conſiſt; the *red* rays, or *red* light, is concluded to be that which conſiſts of the larger particles.

Red is diſtinguiſhed into three kinds; one bordering on the *blue*, as *columbine* or dove-colour, purple or crimſon; another bordering one *yellow* or flame-colour, and orange.

Between theſe extremes is a medium, partaking neither of the one nor the other, which is what we properly call *red*.

Acids turn *black*, *blue*, and *violet* into *red*; and *red* into *yellow*; and *yellow* into a very *pale yellow*.

Alkali's change *red* into *violet* or *purple*, and *yellow* into *feuillemort* or *dead-leaf colour*.

Terreſtrial and ſulphureous matters become *red* by extreme heat; and ſome at length black, as may be ſeen in *brick*, *red-bole*, *red-chalk*, *ſlate*, *pumice*, which, when vitrified by a burning glaſs, become black; lobſters become red by boiling by a moderate fire, and by a violent fire, black.

Mercury and *ſulphur* mix'd and heated over a moderate fire, make a beautiful *red*, call'd artificial *cinnabar*.

An *acid ſpirit*, as *lemon* juice, being pour'd on a blue ſolution of *turnſole*, turns it into a beautiful *red*: *alkali* reſtores it to its original blue.

Filtrating the reddeſt wine takes from it all its *red* colour.

M. *de la Hire* obſerves, that a very luminous body, view'd through a black one, always appears *red*; as when the ſun is ſeen ſhining through a black cloud.

He adds, that many perſons, who ſee all the other colours perfectly well, yet have no idea of *red*, and only ſee it as *black*.

Some reckon ſeven kinds or caſts of *red*; viz. *ſcarlet red*, *crimſon red*, *madder red*, *half-grain red*, *lively orange red*, and *ſcarlet of cochineal*; but they may all be reduc'd to theſe three, according to the three principal drugs which produce the colours, which are *vermilion*, *cochineal*, and *madder*.

The fine *ſcarlet*, call'd *ſcarlet of the Gobelins*, is made of *agaric* water prepar'd with *bran*, and turn'd a little ſourish, *woad*, and *ſcarlet-green* or *vermilion*; ſome *dyers* add *cochineal*, and others *fænugreek*, brightening it with ſour water, *agaric*, *tartar*, and *turmeric*.

Crimſon red is made with ſour water, *tartar*, *cochineal*, *meſtique*.

Madder red is made with *madder*, to which ſome add *realgal* and *arſenic*; others common ſalt, or other ſalts, with *wheat* flower; or *agaric* with ſpirit of wine with *galls* or *turmerick*.

The *half grain* is made with *agaric* or ſour water, half *ſcarlet* grain, half *madder*, and ſometimes *turmeric*.

As to the *lively orange red*, the ſtuff muſt be firſt laid in yellow, then in a liquor made of *goats-hair*, (which has been boiled ſeveral times with *madder*,) and now diſſolv'd over the fire with certain *acids*, as *urine*, *tartar*, &c.

The half *crimſon* is made of half *madder*, half *cochineal*.

The *ſcarlet of cochineal*, or *Dutch ſcarlet*, is made with *ſtarch*, *tartar*, and *cochineal*; after it has been firſt boil'd with *alum*, *tartar*, *ſal gemma*, and *aqua-fortis*, in which *tin* has been diſſolved.

Beſides theſe ſeven *reds*, which are good and allow'd colours, there is alſo a *Braſil red*, which is diſcouraged, as fading eaſily.

Of the ſeven good *reds*, only four have particular caſts or ſhades; the *madder red*, the *crimſon red*, the *lively orange red*, and the *ſcarlet of cochineal*.

The caſts or ſhades of *crimſon* are fleſh-colour, peach-colour, carnation-roſe-colour, an apple-tree flower-colour.

Thoſe of *madder* are fleſh-colour, onion-peel-colour, and flame-colour.

Thoſe of the *orange* are the ſame with thoſe of the *crimſon.*

Scarlet, beſides the ſhades of all the reſt, has ſome peculiar to itſelf, as cherry-colour, fire-colour, *&c.*

RED; in painting in oil-colours, they uſe a red call'd a *cinnabar*, or *vermilion*; and another call'd *lacca.*

In *limning* and *freſco*, for a *violet-red*, inſtead of *lacca*, they uſe a natural earth found in *England*; for a *brown-red* they uſe *oker*.

Obſervations on RED *colours.*

Red-lead is the neareſt to an orange-colour, and mix'd with yellow berries, it makes a perfect orange. It is us'd for buildings and highways in landskips, being mix'd with a little white.

It is the only bright colour to ſhadow yellow garments with, to make them appear like changeable taffety; and to colour any light ground in a picture, and ſeveral other uſes.

Cinnabar lake; this is good for ſhadowing yellow garments with in the darkeſt places; as alſo *vermilion* mix'd with *white*, only it makes a sky-colour, with *white* and *red-lead* a fleſh-colour; and is an excellent colour of itſelf to colour garments with.

This colour being dear, you may therefore, for ordinary uſes, inſtead of it uſe red-ink, thickened upon the fire; which will ſerve very well, and better than *lake*, unleſs it be very good.

Red ink is made by boiling *Braſil* raſp'd in *vinegar*, mix'd with beer, adding a little *alum* to heighten the colour; boil it 'till it taſtes ſtrong on the tongue, then ſtrain it out, and keep it cloſe ſtopp'd for uſe.

But if it be made a fleſh-colour, or a sky-colour, then it muſt not be thickened.

Vermilion is a moſt perfect ſcarlet-colour; it is ſo fine, that it needs no grinding, but may be tempered with your finger, with glair or gum-water, and ſo us'd, mixt with a little yellow-berries, it makes it the lighter and brighter colour, and is then principally us'd for garments.

A glorious colour of Eaſt-India *cakes.*

In uſing theſe cakes, you may take one, or a part of one of them, and put it into a horſe-muſcle ſhell, adding a little fair water, juſt enough to wet it all over, letting it lie ſo about a quarter of an hour; then ſqueeze it hard againſt the ſhell, or wring it out between your fingers, and there will come forth an admirable tranſparent colour, which will ſerve inſtead of *lake*, if the *red-cake* be good.

Theſe cakes are commonly counterfeit, and good for little; but you will find by cutting a little way into them, if they be good, they are as red within, as they are without; if naught, they look pale and whitiſh within.

R E D

Of dying RED *colours.*

1. *To dye the beſt* Red *colour.*

Take clear ſtale wheat-bran liquor, or ſour tapwort, a ſufficient quantity, *alum* bruiſed three pounds, put all into your copper, enter your twenty yards of broad cloth, and handle it, boil it three hours, cool and waſh it well; take freſh wheat-bran liquor a ſufficient quantity, *madder* five pounds, enter your cloth at a good heat, handle it to a boiling heat, cool it and waſh it well; take freſh wheat-bran liquor a ſufficient quantity, let it boil, and put in urine a gallon, enter your cloth, boil half an hour, cool it and waſh it, and it is done.

Note, *Urine is not much uſed now, and ſome do not waſh the cloth out of the* alum.

2. *Another* Red *dye.*

Take clear fair water a ſufficient quantity, *alum* three pounds; boil and enter twenty yards of broad cloth, boil it two hours and an half; take it out, and range it, and hang it up a little while to let the water drop from it. Take clear ſtale bran-liquor a ſufficient quantity, *madder* four pounds, ſteeped firſt an hour in ſmall beer, bring it almoſt to a ſcalding heat, and enter your cloth, and handle it ſwiftly for the ſpace of half an hour; take your cloth into urine, after which waſh it well, and it is done

3. *Another very good* Red *dye.*

Take water a ſufficient quantity, *alum* three ounces to every pound of wool, yarn, or cloth; boil the wool, put it not in 'till the *alum* is melted, boil three hours, take it out, waſh it well in cold water, and caſt away the liquor; take freſh clear bran-liquor, or ſmall-beer unboiled, add to it five ounces of *madder* to every pound of wool, yarn, or cloth, *&c.* put in the *madder* when the liquor begins to be warm; break the *madder* well with your hands when in the liquor, and when it is near boiling, enter your cloth, *&c.* and handle it well, boiling it half an hour, or 'till it is well-coloured; then put in three quarts of urine, give two or three boils, and ſo take out your cloth, *&c.*

4. *Another* Red *colour.*

Take liquor a ſufficient quantity, *alum* three pound, *tartar* one pound, boil and enter twenty pounds of wool, yarn, or cloth; boil two hours, take it out, waſh it clean, caſt away the liquor, and put in clear fair water, and *madder* four pounds: when it boils, enter your cloth, *&c.* again, and handle it 'till it is enough.

5. *Another* Red *colour or dye.*

Take water thirty quarts, *alum* two ounces and an half, and therein boil thirty pounds of wool, yarn, or cloth, *&c.* and take it out; take fair water ten gallons, *madder* five ſhillings worth, let it ſtand twelve hours, boil and enter your wool, yarn, cloth, *&c.* boil it quickly, and then take it out, and put it into ſtrong urine for one hour, then take it out and waſh it.

6. *Another* Red *colour or dye.*

Take ſour bran-liquor, *alum* two pounds and an half, *tartar* two ounces; enter twenty yards of broad cloth, and boil them three hours, and take them out; take freſh bran-liquor a ſufficient quantity, *madder* four pounds, boil, handle, and finiſh it.

7. *Another* Red *dye.*

Take ſtale wheat-bran liquor ſix days old, or ſour tapwort a ſufficient quantity, *alum* three pounds, enter twenty yards of broad cloth, boil three hours, cool and waſh them; take freſh and clear bran liquor a ſufficient quantity, *madder* four pounds ſteeped in the ſame liquor, enter your cloth at a good heat, and handle it to a boiling, take it out cool, and waſh it well.

8. *A good* Red *dye.*

Take rain-water a ſufficient quantity, *Braſil* in powder, fine *vermilion*, of each one ounce, *alum* one drachm, boil them 'till half is conſumed.

9. *Another excellent* Red *dye.*

Take *lixivium* of unſlacked lime five gallons, *Braſil* ground two pound and a half; boil to the half, then put to it *alum* twenty ounces; keep it warm, but not to boil: then what you would dye in this liquor, dip into a lye made of aſhes of *tartar*, letting it dry, then dip it into the lye.

10. *Another good* Red *colour or dye.*

What you would dye, firſt boil in *alum* water, then dip it into the following liquor; take water a ſufficient quantity, *Roſſet* one pound, *gum Arabick* a little, boil a quarter of an hour, and then ſtrain it for uſe.

11. *To make a pure clear* Red *dye.*

Take wheat-bran liquor thirty quarts, or a ſufficient quantity, *Braſil* in powder four pounds, *alum* in powder two pounds, *tartar* one pound; mix and diſſolve, and make a tincture; enter your ſtuff or cloth, boil it for two hours, take it out, and boil it again in freſh bran-liquor thirty quarts, adding *madder* three pounds, and perfect the colour with a moderate heat without boiling.

12. *Another good* Red *dye.*

Boil the things you would dye firſt in *alum* water, then take them out, and boil them in water with *Braſil* in fine powder; let it boil 'till the ſcum ariſes, then put in the things to be dyed, and let them boil 'till the water looks of an orange tawney; caſting in then alſo a handful of bay ſalt.

13. *To colour barley-ſtraw, &c.* Red.

Boil ground *Braſil* in a *lixivium* of pot-aſhes, and in that boil your ſtraw.

14. *A* Red *pigment, which ſhall not grow black.*

Take fine *vermilion*, grind it with water of *gum ammoniacum*, with the addition of a little *ſaffron*.

15. *To dye a good* Red.

Take ſtale clear wheat-bran liquor a ſufficient quantity, *alum* three pounds, enter twenty yards of broad cloth, handle and boil it three hours, take it out, cool and waſh it well; take freſh bran-liquor a ſufficient quantity, *madder* ſix pound, enter your cloth at a boiling heat, and handle it 'till it is as deep as you would have it; and if you pleaſe, finiſh it with *Braſil.*

16. *To make* Red *paper.*

Take baſtard *ſaffron*, or *ſafflower*, eight ounces, put it into a linnen bag, and waſh it by a river ſide, 'till it ſcarcely gives any colour; then put the remainder into a baſon, ſprinkling it with powder of glaſs-wort (or rather with *ſoda*) one ounce; ſo put it into a little pail of blood-warm water, ſtirring it, after which ſtrain it, and add a little juice of lemons to make it give a *red* colour, the paper ought to be fine, and dipt into the baſon.

Of dying a Red *bluſh-colour.*

1. *To dye a* Red *bluſh-colour.*

Take ſtale clear wheat-bran liquor ſix days old, a ſufficient quantity, *alum* three pounds and an half, *red tartar* half a pound, melt theſe, and enter twenty yards of broad cloth; handle and let it boil three hours, take it out and waſh it well, (but ſome waſh it not.) Take freſh liquor a ſufficient quantity, of the beſt *madder* three pounds, enter your cloth, and handle it to a boiling heat, cool and waſh it again: laſtly, take freſh bran-water a ſufficient quantity, let it boil, enter your cloth, let it boil a quarter of an hour, cool and waſh it well again.

2. *A* Red *bluſh-colour in grain.*

Take ſtale ſour clear bran-liquor a ſufficient quantity, *alum* three pounds and a half, *red tartar* half a pound, enter twenty yards of broad cloth, boil it three hours, cool and waſh it, take freſh clear bran-liquor a ſufficient quantity, beſt *madder* three pound, enter and boil again. Take freſh bran-liquor a ſufficient quantity, *grains* in fine powder four ounces, *red tartar* three ounces, enter your cloth, boil an hour or more, keeping your cloth well under the liquor, then cool and waſh.

3. *Another bluſh-colour in grain.*

Take clear ſtale, or ſour wheat-bran liquor, a ſufficient quantity, *alum* three pounds and a half, *red tartar* eight ounces; melt them, and enter twenty yards of broad cloth, boil it three hours, handle it well, take it out, cool and waſh it; take freſh bran-liquor a ſufficient quantity, enter your cloth, and handle it, letting it boil a quarter of an hour, cool and waſh it; take more freſh bran-liquor a ſufficient quantity, make it boil, and add thereto grains in powder two ounces, *red tartar* one ounce and half, let them boil, enter your cloth, handle and boil it three quarters of an hour, then cool and waſh it well.

4. *To make a* Spaniſh *carnation colour.*

Take baſtard *ſaffron*, or *ſafflower*, waſh it well, dry it and beat it; and to a pound of it, being beaten, add calcined *tartar* four ounces; grind all together, and put it into a double coarſe linnen bag, and affuſe upon it a quarter of a pint of lemon juice blood-warm; put into this a ſufficient quantity of fair water, and then put in the thing you would dye: but the ſtuff or cloth you would dye is firſt to be boiled in *alum* water.

Of dying Red-*roſe, or carnation colours.*

1. *To dye a* Red *roſe a blood-red, or carnation-colour.*

Take liquor of wheat-bran a ſufficient quantity, *alum* three pounds, *tartar* two ounces, boil and enter twenty yards of broad cloth three hours, cool and waſh it; take freſh clear bran-liquor a ſufficient quantity, *madder* four pounds, boil and ſadden according to art.

2. *Another* Red-*roſe or carnation colour.*

Take wheat-bran liquor a ſufficient quantity, *alum* two pounds, *tartar* two ounces, boil and enter twenty yards of camblet, and boil it three hours, after which take it out, and waſh it very well; then add *madder* a pound, enter and boil it again, cool and waſh it; after which take clear liquor a ſufficient quantity, *cochineal* in fine powder two ounces, *tartar* two ounces, enter your camblet, boil and finiſh it.

3. *To dye crimſon in grain.*

Firſt boil the yarn, ſtuff, *&c.* in the *red*, (in the following article) then finiſh it in a ſtrong tincture of *cochineal*, made in part water, part wine, or in wheat-bran liquor; where note, that the veſſels, in which the materials are to be boiled, muſt be lined with tin, otherwiſe the colour will be defective; the ſame obſerve in dying of ſilks, in each colour, with this caution, that you give them a much milder heat, and a longer time.

4. *An excellent obſervation*

The *Bow-dyers* know that the reſolution of *Jupiter* (which is diſſolved tin) being put into a kettle with *alum* and *tartar*, makes the cloth, *&c.* attract the colour into it, ſo that none of the *cochineal* is left, but all drawn out of the water into the cloth.

5. *Another obſervation.*

The ſpirit of *nitre*, being us'd with *alum* and *tartar* in the firſt boiling, makes a firm ground, ſo that they ſhall not ſpot,

nor

not loſe their colour by the ſun, fire, air, vinegar, wine, urine, or ſalt-water, *&c.*

To dye SILK RED.

For every pound of ſilk allow one pound of *Braſil*, boil it, and ſtrain it, then boil the wood again, adding cold water to it; wave or turn the ſilk about in it, and take it out of that without wringing, when it hath ſufficiently imbib'd the tincture; then add a little pot-aſhes, or put them into cold water, and turn the ſilk up and down in it, and when it is red enough, rinſe and dry it.

Of dying SILK RED.

The way of preparing the liquor or ſuds, in which the ſilk muſt be ſteep'd, before it be dyed CRIMSON.

For every pound of ſilk put four handfuls of wheaten-bran into the quantity of two pails of water; boil them together, and pour the liquor into a tub, and let it ſtand all night, clarify it, and put into half the water, half a pound of *alum*, and a quarter of a pound of *tartar* of red-wine, reduc'd to an impalpable powder; add alſo half an ounce of *turmerick*, reduc'd to a fine powder; boil them together for a quarter of an hour, ſtirring them very well; then take the kettle off the fire, and immediately put in the ſilk, and cover the kettle very cloſe, that none of the ſteam may evaporate.

Let it ſtand thus for three hours, then take out the ſilk, and rinſe it very well in cold water; then beat it very well upon a block, and let it dry.

Then beat a quarter of a pound of galls ſmall, put them into a pail of running river or rain-water; boil them for a full hour, then take the kettle off the fire, and when it is grown juſt cool enough for you to endure your hand in it, put in the ſilk, and let it lie and ſteep in it for an hour, then take it out, and dry it.

To dye SILK *a* MADDER RED.

The preparatory liquor is made as for the crimſon.

Put half a pound of *madder* into the quantity of a pail of river-water, let it boil for a full hour, but take an eſpecial care that it does not boil over; then pour it off into a fat, adding half an ounce of *turmeric*, and ſtir it about with a ſtick; and when it is cold, put in the ſilk; and when you take it out, rinſe it very well, and beat it on the block; then boil half a pound of good *Braſil* wood, in about a pail-full of preparatory liquor, for full half an hour; then pour it off into a fat, into which put the ſilk, and afterwards cleanſe and ſcour it as with ſoap; then rinſe it in river-water, *&c.* according to art.

Another Madder.

Put clear rain-water into a very clean kettle, and having firſt *alum'd* and prepar'd the ſilk, as before directed (*See the article*

CRIMSON ;) for every pound of ſilk take one pound of *madder*, and a quarter of a pound of galls; put theſe together with the ſilk into the ſuds, but do not ſuffer them to boil; let it lie half an hour in the aforementioned liquor; then rinſe it, beat it, and hang it upon ſticks; then rinſe it in a tub of cold water, with a few pot-aſhes, and if the dye is finiſhed, rinſe and dry it.

To dye woollen cloth, or ſtuff, MADDER RED.

Boil three pound of *alum*, two pound and a half of white *tartar*, a quarter of a pound of *fœnugreek*, and two quarts of wheat-bran in the copper, then put in the ſtuff, and let it boil for two hours and an half; then take it out, and cool it very well, and hang it out for one night; then in order to dye it, put into the copper ſeven pounds of *madder*, an ounce and a half of *aqua fortis*, a pint of wheat-bran, and ſtir them about very well, and rinſe the ſtuff in the dye, and then wind it very ſwiftly upon the roller, and tumble it about the copper for an hour at leaſt, taking care that the fire keep it boiling hot; after which, take it out and rinſe it.

To dye a Genoa MADDER RED.

Take three pound of *alum*, one pound and a half of *tartar*; boil the ſtuff in it an hour and a half; then pour off the water, and pour freſh water into the kettle; then make a liquor of ten pound of *madder*, a quarter of a pound of *pot-aſhes*, and ſome urine, and when it hath diſſolved one night, boil it off.

To dye RED.

Firſt take three pound of *alum*, two pound of *tartar*, half a pint of wheat-bran, in proportion to twenty three yards of cloth, then put more water into the copper, and add ſix pound of good *madder*, and a glaſs full of *vinegar*, let the dye be hot, and then put in the cloth, ſtirring it about 'till it hath ſufficiently imbib'd a red colour, then rinſe it out, and you will find it of a beautiful *red* colour; but take notice, that the cloth muſt always be boil'd three hours in *alum* and *tartar*.

Another MADDER RED.

For every twelve pound of ſtuff take a good handful of wheaten bran, one pound and an half of *alum*, three quarters of a pound, half an ounce of *turmerick*, in which boil the ſtuffs for two hours; pour off the water, fill the copper again, and rinſe the ſtuffs; then add one pound and a half of *madder*, the third part of which muſt be before diſſolv'd, and then put into the ſuds; to which you muſt add a little beaten white *ſtarch* and *vinegar*, then roll the ſtuff upon a roller in it, 'till it is dyed of a colour ſufficiently deep.

Another. Hang over the fire an equal quantity of ſtarch-water and rain-water, and for every pound of ſtuff put in two ounces of *alum*, and let it boil for an hour, and ſtir it well about;

then take it out, and rinſe it very well, then hang the liquor over the fire again, and for every pound of ſtuff put in three ounces of *Braſil*, and a few pot-aſhes; then put in the ſtuffs, and boil them 'till they are ſufficiently tinged; after which take them out, and dry them as uſual.

To dye MADDER RED *a light tawney.*

Soak the ſtuffs one or two nights in the black-dye, roll them and work them well about, to prevent their growing black; and you may take them out, when they are dyed of a tawney, according to the degree of light or dark, as you would have them, and rinſe them, *&c*

To dye the Engliſh MADDER RED.

Take two pound and a half of *alum*, one pound of pulverized white-wine *tartar*, boil them in water, and when it is proper put in your wet cloth; then put into the ſuds, for the quantity of twenty-ſix pound weight of cloth, half a pound of tempered *aqua-fortis*; and afterwards put in the cloth, ſtir it about very well, and very ſwiftly, boil it for two hours, and let it remain in the ſuds twelve hours, and then rinſe it out.

To finiſh it.

Take four pound of *madder*, an ounce and half of *gummi-gutta*, an ounce and half of purified *pot-aſhes*, one pound of wheat-bran; mix them in water, and pour them with the liquor into the ſuds; then ſtir it, and work it as is proper, that it may not be ſpotted, and you will find this an extraordinary dye.

To dye wool or ſilk of the Poliſh RED.

For every pound of wool or ſilk take a pail-full of water, warm it, and put in four ounces of galls pulveriz'd; and when it begins to boil, put in the *madder*, which is to be proportioned according to the depth or lightneſs of the dye; ſtir them together, and dye the ſilk or wool for a quarter of an hour; and while it is boiling put in ſome pot-aſhes, and dye it a quarter of an hour more, then rinſe it out, and you have the true *Poliſh red.*

To dye a brown RED.

Firſt dye the ſtuff *red*, then having mix'd ſlacked *lime* and *braſil* together, boil them, and then paſs the ſtuff through it once or oftener.

Some perſons make uſe of pot-aſhes lye, but that ſometimes renders the dye too deep or brown; and lime is really preferable.

But particular care muſt be us'd in this operation, for if it is work'd too ſlowly, it is very apt to ſpot.

REFINING, is the art of purifying a thing, or of rendering it finer, cleaner, and purer: It is chiefly underſtood of metals, ſugar, and ſalts.

REFINING *of* GOLD.

This is perform'd three ways; *viz.* either with *antimony* ſublimate, or *aqua-fortis*; the laſt of theſe is the moſt uſual, and leaſt dangerous of them all, and is call'd *depart* or *parting.*

To Refine gold *with antimony*, they make uſe of a wind-furnace, and a common crucible of a ſize anſwerable to the quantity of gold to be refin'd; always taking care that the gold and antimony, both together don't fill the crucible more than half full.

After the *gold* is melted in the crucible, the *antimony* is thrown in in powder: The proportion of the *antimony* to the *gold* is eight ounces to a pound; if the *gold* be between ſixteen and twenty-two carats fine; if it be under ſixteen carats, then they uſe five quarters of a pound to eight ounces of *gold*; and ſtill the greater quantity of *antimony* is requir'd, the coarſer the *gold* is.

As ſoon as they have put the *antimony* into the crucible, they cover it, and after they have charg'd the furnace with charcoal, they put on the capital, which is let to ſtand 'till ſuch time as the crucible is left quite bare; then they take off the capital, and leave the crucible to cool in the furnace of itſelf, 'till ſuch time as they can take it out by the hand; then they break it, to get out the button or culot, which is a maſs of fine gold remaining at the bottom, with the *fæces* of the *antimony*, the *ſilver* and *copper* alloy, and ſometimes little particles of *gold* itſelf over it.

But notwithſtanding the *gold* thus prepar'd is very pure, yet the antimony gives it ſuch a harſh brittle quality, that it ceaſes to be ductile, and muſt be ſoftened by the fire with *ſalt-petre* and *borax*, to bring it to itſelf.

In order to this operation, they prepare what is call'd a *dry-coppel*, which is a coppel made of crucible earth, which does not imbibe like the *coppels* made of aſhes.

When the *coppel* has been ſufficiently heated in the *refining* furnace, they put the *gold* into it, and cover it up with charcoal.

As ſoon as the *gold* is diſſolved, which is very ſoon, by reaſon of the remains of the *antimony*, they blow it with the bellows to drive the mineral entirely away, which now goes off in ſmoak; and add to it, as ſoon as the fumes ceaſe, a little *ſalt-petre* and *borax* in powder, which collect the impurities, which remain'd upon the diſſolution, and fix the *gold* in the *coppel* in form of a plate.

Then the *gold* is taken out of the *coppel*, and melted again in a crucible, with an addition of two ounces of *ſalt-petre* and *borax* in powder, to each eight ounces of *gold*, as ſoon as it has ceaſed to fume; and then it is caſt into an ingot, which upon trial is found to be twenty-three carats, twenty-ſix thirty ſeconds finer.

As to the particles of gold, which may have been left behind with the alloy, in the fæces of the *antimony*; they get them out by a *dry-coppel*, with the ſame meltings and ingredients, as were uſed in ſoftening the former.

And when they are certain by the *eſſay* of the ſhare of gold, which that matter contains; they *refine* it to ſeparate the copper; and afterwards make the depart.

As for the gold which may be left ſticking to the *dry-coppels*; they get that out by breaking and pulverizing the crucibles, and by repeated waſhings of the powder of them in ſeveral waters; much after the manner of the LAVADEROS; which ſee.

The method of REFINING GOLD *by means of ſublimate.*

They begin the proceſs like that with *antimony*, *i. e.* in the ſame furnace, with the ſame coal, the ſame fire, and the ſame crucibles.

When the *gold* is melted in the crucible, they caſt in the ſublimate; not in powder, but only broke in pieces.

The proportion is, if the *gold* be of twenty two caracts, an ounce or ounce and half, or even two ounces to eight ounces of *gold* to be refin'd; if of twenty caracts, three ounces; and if it be only from eighteen to twelve caracts, five or ſix ounces; in which laſt caſe, they part the ſublimate into two; and put in one half at a time, with the *gold* in a new crucible; which, when the operation is over, leaves the *gold* of eighteen or twenty caracts, according as it was in fineneſs before.

When they have done this, they raiſe it by fire, as follows.

Having put the broken ſublimate into a crucible, with the melted *gold*, they cover the crucible immediately to ſmother the mineral; and then furniſh the furnace with charcoal, and put on the capital.

Then a quarter of an hour after they take off the capital, laying the crucible bare, and give it the cold air, *i. e.* blow off all the aſhes and other impurities that may be floating on the liquid *gold*, with a pair of bellows, the nozzle of which is crooked.

This is repeated again and again, till all the impurities of the *gold* are carried off, by virtue of the ſublimate; and that they find it of a bright glittering colour: after which, it is taken out of the crucible, and the *gold* is caſt into an *ingot*.

This method of *refining* by *ſublimate* is both cheaper and more compleat than that by *antimony*; but they are both exceedingly dangerous, by reaſon of their ſulphureous and arſenical exhalations: the only difference in their malignity conſiſts in this, that the poiſon of the *antimony* is ſlower than that of the *ſublimate*.

Gold may alſo be refin'd with lead and aſhes; but this method is ſeldom uſed, excepting in eſſays.

The method of REFINING SILVER.

There are two ways of doing this; the one is with *lead*, and the other is with *ſalt-petre*.

That perform'd with *lead* is both the beſt and cheapeſt; altho' that with *ſalt-petre* ſtill obtains in many places, for want of workmen who underſtand the method of the operation of the former. The method of refining with ſalt-petre is as follows.

This operation is perform'd in a wind-furnace. They firſt reduce the *ſilver*, to be refin'd, into grains, about the ſize of a ſmall pea; which is done by firſt melting it, and then throwing it into a tub of common water, and then heating it over again in a boiler.

This being done, they put it into a crucible; putting to every eight ounces of *ſilver* two of *ſalt-petre*.

Then they cover the crucible with an earthen lid, (in the form of a dome,) exactly luted; which lid however muſt have a little aperture in the middle.

The crucible being ſet into the furnace, and cover'd with charcoal, which is only to be lighted by degrees; at length they give it the full force of the fire, to put the metal into a perfect fuſion. This is repeated three times ſucceſſively, at an interval of a quarter of an hour.

After the third fire they uncover the furnace, and let the crucible cool; and at length break it, to get out the *ſilver*, which is found in a button or *culot*, the bottom of which is very fine *ſilver*; and the top mix'd with the fæces of the *ſalt-petre*, and the alloy of the *ſilver*, and even ſome particles of fine *ſilver*.

Then they ſeparate the *culot* from the impurities, and melt it in a new crucible; and throw charcoal-duſt into the diſſolution, and work the whole briſkly together.

Then they cover the crucible up again, and charge the furnace with coal, and give it a ſecond fire.

Having done this, they blow off the aſhes and impurities with bellows, from off the top of the metal; till it appear as clear as a looking-glaſs; and then they throw in an ounce of borax broken to pieces.

Then in the laſt place, they cover the crucible up again, and give it the laſt fire, and after this caſt it into ingots, which are found eleven penny weight and ſixteen grains fine.

To recover the *ſilver* that may be left in the *fæces* and *ſcoria*, they pound them, and give them repeated lotions in freſh water.

As for the method of refining ſilver *with lead, ſee the article* SILVER.

REFORMATION is repreſented [in *Painting*, &c.] by an antient matron in mean habit, a pruning-hook in her right hand, and in her left a book open inſcribed,

——Pereunt Diſcrimine nullo
Amiſſæ Leges.———

i.e. The laws are always defended, and never periſh by any accident.

She is repreſented old, as moſt proper to reform and govern; the poor habit ſhews her exempt from luxury; the hook, the intrenching all abuſes, ill cuſtoms and tranſgreſſion.

RAPHAEL DA REGGIO DI MODENA born in 1552 ſcholar of *Fed. Zucchero*, liv'd at *Rome*, excell'd in hiſtory, died in the year 1680, aged 28 years.

GIO ANTONIO REGILLO DA PORDENONE born in the year 1484, ſtudied *Giorgione*, liv'd at *Venice* and *Ferrara*, excell'd in hiſtory-painting, died in the year 1540, aged 56 years.

RELIEVO }
RELIEF } [in *Painting*, &c.] is the degree of force or boldneſs, wherewith the figures ſeem at a due diſtance, to ſtand out from the ground of the painting, as if really imboſs'd.

The *relievo* depends much upon the depth of the ſhadow, and the ſtrength of the light; or on the height of the different colours, bordering on one another; particularly on the difference of the colour of the figure, from that of the ground.

When the light is well choſen to make the neareſt parts or figures advance, and well diffus'd on the maſſes; ſtill inſenſibly diminiſhing, and terminating into a large ſpacious ſhadow, brought off inſenſibly; the *relievo* is ſaid to be bold, and the *clair-obſcure* well underſtood.

RELIEVO }
RELIEF } [in *Sculpture*, &c.] is apply'd to a figure, which projects or ſtands out, prominent from the ground or plan, whereon it is form'd; whether that figure be cut with the chiſſel, moulded or caſt.

There are three kinds or degrees of *relievo*; viz *alto*, *baſſo*, and *demi-relievo*.

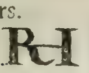
Alto-relievo, *haut relief* or *high relievo*, is when the figure is form'd after nature, and projects as much as the life.

Baſſo relievo, *baſs relief* or *low relievo*, is when the work is rais'd but little from the ground, as in medals, and the frontiſpieces of buildings; particularly the hiſtories, feſtoons, foliages and other ornaments of friezes.

Demi relievo is when one half of the figure riſes from the plan, *i.e.* when the body of the figure ſeems cut in two; and one half of it is clapp'd upon the ground: when in a *baſſo relievo*, there are parts that ſtand clear out, detach'd from the reſt, the work is call'd a *demi-baſſo*.

RELIGION is repreſented [in *Painting*, &c.] as a woman clothed in a ſilver veil, with a garland or mantle of white, fire in her left hand, in her right a book, and a croſs and elephant by her.

Veiled, becauſe ſhe has been always ſecret; the croſs is the victorious banner of true religion; the book is the ſcripture; the elephant is an emblem of Religion, he adoring the ſun and ſtars.



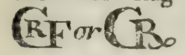
REMBRANT *van Rheyn*, born in the year 1606, a ſcholar of *Laſman* of *Amſterdam*, liv'd in *Holland*, excell'd in hiſtory and portraits, died in the year 1668, aged 62. He uſed this mark

GUIDO RENI born in 1575, ſcholar of *Denis Calvert*, and the *Carraches*, liv'd at *Bologna* and *Rome*, excell'd in hiſtory, died in the year 1642, aged 67 years.

RENOWN is repreſented [in *Painting*, &c.] as a man of a pleaſant aſpect, well-proportioned Limbs, clothed with a cloth of gold, mix'd with purple, adorned with a garland of red hyacinths, and a gold chain, leaning upon *Hercules*'s club with one hand, and carries a lighted torch in the other.

His aſpect imitates his virtuous mind, the robe ſhews him dignified, the hyacinth wiſdom and prudence, the chain honour, the club the ideas of all virtues, the torch denotes ſplendor acquired by his illuſtrious exploits.

REPOSE [in *Painting*] is a term us'd for certain maſſes or large ſyſtems of aſſemblages of light and ſhade, which being well conducted, prevent the confuſion of objects and figures, by engaging and taking up the eye, ſo as it can't attend to the other parts of the painting for ſome time; and thus leading it to conſider the ſeveral groups gradually, and as it were to proceed from ſtage to ſtage.



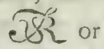
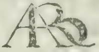
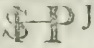
GASPAR REVERDIN, or *Ravenſtein*, his pieces are laſcivious; and two of them repreſent courtezans ſporting together; he us'd this mark.

REWARD is repreſented [in *Painting*, &c.] by a man clothed in white with a golden girdle, a palm with an oak-branch in his right hand, and a crown and garland in his left.

The oak and palm denote honour and profit, the principal parts of recompence; the garment and girdle truth, when recompence is accompanied with virtue; for good done to thoſe that deſerved it not, is not reward.

RHETORICK is repreſented [in *Painting*, &c.] by a fair lady richly clothed, with a noble head-dreſs, very complaiſant, holds up her right hand open, a ſcepter in her left with a book; on the skirt of her petticoat are theſe words, *Ornatus perſuaſio*, of a ruddy complection, with a chimæra at her feet.

Fair and complaiſant, becauſe there is none ſo ill-bred that is not ſenſible of the charms of eloquence; her open hand ſhews *rhetorick* diſcourſes in a more open way than *Logick*; the ſcepter her ſway over mens minds; the book, ſtudy requiſite; the motto denotes its buſineſs; the chimæra the three precepts of it, judicial, demonſtrative, and deliberative.

 or  or  JOSEPH RIBERA, called SPAGNOLETTO, uſed theſe three marks, at different times.

GIOSEPPE RIBERA known by the name of SPAGNOLETTO, ſcholar of *Michaël Angelo da Caravaggio*, liv'd at *Naples*, excell'd in hiſtory and half figures, died in the year 1647, aged 60 years.

DANIELE RICCIARELLE da VOLTERRA born in 1509, ſcholar of *Baldaſſar Peruzzi de Siena*, liv'd at *Rome* and *Florence*, excell'd in hiſtory and ſculpture, died in 1566, aged 57 years.

JOHN RILEY was born in *London*, in the year 1646; he was an excellent *Engliſh* portrait-painter, who arrived to his great ſkill in that province, thro' the inſtruction of Mr. *Zouſt* an extraordinary *Dutch* maſter, of whoſe manner he retained much; tho' perhaps with him, he wanted the choiceſt notions of beauty; but for the painting a face, few have exceeded him, in any nation whatſoever. Had not the gout (an enemy to the ſedentary and ſtudious) carried him off, we might have oppoſed a *Riley* to a *Venetian Bombelli*, or to all that the *French* academy has produced in that manner of painting to this day. His fame roſe upon the death of Sir *Peter Lely*; at which time, he was recommended to the favour of King *Charles* II. by Mr. *Chiffinch*, whoſe picture he drew. He was afterwards employ'd in drawing ſome of the King's children, and at laſt, his Majeſty ſat to him himſelf. He alſo drew King *James* II. and his Queen, and King *William* and Queen *Mary*, upon the Revolution, when he was ſworn their Majeſties painter. He was very diligent in the imitation of nature, and ſtudying the life rather than any particular manner, by which he attain'd a pleaſant and moſt agreeable Stile of painting. His excellence was confin'd to a head, a great number of which do him juſtice; even in the beſt collection of our nation. He was modeſt and courteous in his behaviour, and of an engaging converſation; he died *anno* 1691, aged 45 years, and lies buried in *Biſhopſgate* Church.

RIVERS, in painting of them, you ought to conſider the properties and adjuncts of each; which uſually conſiſt in ſome notable action or accident, done or happen'd near them; ſome famous city, fruits or reeds ſituated upon or near their banks;

ſome fiſh only proper to their Streams; or recourſe of ſhipping from all parts of the world.

Therefore it will be proper to place the city upon their heads; their fruits in a *cornucopia*; reeds, flowers, and branches of trees in their garlands and the like.

TIBER, a river of *Italy*, is expreſs'd (in the *Vatican* in *Rome*) in a goodly ſtatue in marble, lying along; (for ſo they muſt be drawn) holding under his right hand, a ſhe-wolf; with two little infants ſucking at her teats, leaning upon an urn or pitcher, out of which iſſues forth its ſtream; in his left, a *cornucopia* of delicate fruits: of a grave countenance, and with a long beard; a garland of flowers upon his head, and reſting his right leg upon an oar.

NILUS, the river of *Egypt*, is repreſented (in the *Vatican* at *Rome*) cut out in white marble, adorn'd with a garland of ſundry fruits and flowers; leaning with his left arm upon a *Sphynx*, and a ſtream iſſuing from under his body; under his left arm, a *cornucopia* full of fruits and flowers on one ſide, with ſixteen little children ſmiling, and pointing to the flood.

The Sphynx was *ſaid to be ſometime a monſter, which remain'd by* Nilus: the Crocodyle is ſo call'd *ἀπὸ τȣ͂ κρόκον δειλᾶν from his hating ſaffron: it is the moſt famous monſter of* Egypt. *The ſixteen children ſignify the ſixteen cubits in height, the uttermoſt of the flowing of* Nilus; *their ſmiling looks, the advantageouſneſs of the river; which glads the hearts of the Sun-burnt inhabitants.*

PADUS } a river of *Italy*, is repreſented with the face of
PO } an ox, having a garland of reeds and poplar on his head.

This river takes its name from the ſiſters of Phaeton, *whom the poets feign to have been deſtroy'd by lightening and drown'd here: the head of the ox intimates its horrid noiſe and roaring, whoſe crooked banks bear a reſemblance to horns, by its ſides grow many reeds and much poplar.*

NIGER, a river of *Africa*, is repreſented like a black-moor with glory, or a coronet of Sun-beams, falling upon his urn; having by his ſide a lion.

By the Sun-beams and black are ſignified the climate which lies under the torrid zone, the inhabitants of which are blacks or moors; the lion is that, which the countries Mauritania *and* Barbary *breed, being the fierceſt in the world.*

ROCAILLE is thoſe *green* and *yellow* grains, of which beads are made; which are worn by country girls, and great quantities of which are exported to *Africa* and other foreign parts, and worn by the negroes, &c. as necklaces, bracelets, &c.

This is uſed in painting on enamel or glaſs very frequently, tho' it be ill qualified and full of impure lead. Therefore you muſt chuſe the moſt clear and tranſparent *rocaille*, and ſuch as is leaſt charged with colour; yet ſtill this is very far from being ſo fit for the uſes as it ſhould be.

And therefore it will be better in enamel, to uſe the cryſtalline matter made with SATURNUS GLORIFICATUS (which ſee.) However, I ſhall give the preparation of *Rocaille*, and how to compound it.

To make the *yellow grains*, you muſt take a pound of fine white ſand, and three pound of *minium*, mix and pound them together very well in a mortar, and put the whole into a ſtrong crucible, covered and luted; dry the lute, and ſet it afterwards into a glaſs-houſe or wind-furnace, where the fire is violent, to reduce this matter into glaſs. Having thus finiſh'd the *Rocaille*, make it up either into grains, or any other ſhape you pleaſe.

The method of making the *green* is quite contrary to that of the *yellow*: for this put three pound of fine white ſand to every pound of *minium*, and it will be very compact.

This ſtuff will alter its colour, and become a pale red in melting; and theſe are the compoſitions and way of making this *Rocaille*, which is us'd by moſt workmen. Thus you ſee there is no preparing it without lead, which renders it ſo full of impurity.

ROCHETTA is a name commonly given to all aſhes or *polverine* that is us'd in making of glaſs.

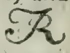
This us'd formerly to be brought out of *Syria*, from the eaſtern parts of it, where it grew in great abundance: but at preſent it comes from *Alexandria*, from *Tripoli*, and from *Spain*.

That which comes from *Syria* is the aſhes of a certain herb, which grows there in great plenty call'd *Kali*; the *ſalt*, which is extracted from it, is far whiter than that of *ſoda*; and hence the ſalt of it helps to make a very good cryſtal, but ſomething inclining towards a sky-colour; the beauteouſneſs is owing to the *oriental polverine* (or that of the *Levant*;) whereas that of *ſoda*, which is more plentiful, makes the cryſtal more blue, and has not that ſhining brightneſs, nor the ſame whiteneſs and beauty. *See* POLVERINE.

PETER ROESTRATEN was born at *Haerlem*, and a diſciple of *Hans Hals*, whoſe manner he at firſt followed; but at laſt falling into ſtill life, and having performed an extraordinary piece, that Sir *Peter Lely* ſhew'd to King *Charles*, and which his Majeſty approved, he was encouraged to purſue that way, which he continu'd to his dying day. He was an excellent maſter in that kind of painting, *viz.* on gold and ſilver plate, gems, ſhells, muſical inſtruments, *&c.* to all which he gave an unuſual luſtre in colouring, and for which his pictures bear a good price. 'Tis ſaid, that one day promiſing to ſhew a friend a whole length of his maſter *Hans Hals*, and thro' a little delay his friend growing impatient to ſee it, he ſuddenly called up his wife, (his maſter's daughter, whom he had married) and told him ſhe was a whole length of that maſter. He died about 27 years ago, and lies buried in *Covent-garden* Church.

GIO FRANCESCO ROMANELLI, born in the year 1612, ſcholar of *Peter de Cortona*, liv'd at *Rome*, excell'd in hiſtory, landskips, battles, and died in the year 1673, aged 59 years.

GIULI ROMANO, ſcholar of *Rafaelle*, liv'd at *Rome* and *Mantua*, excell'd in hiſtory and architecture, died in 1546, aged 54 years.

SALVATOR ROSA, born in the year 1614, ſcholar of *Daniele Falconi*, liv'd at *Rome*, excell'd in hiſtories, landskips, and battles, died in the year 1673, aged 59 years. He us'd this mark. 

SUSANNAH PENELOPE ROSE, wife to Mr. *Roſe* the jeweller now living, and daughter to Mr. *Richard Gibſon* the dwarf before-mentioned, by whom ſhe was inſtructed in water-colours, and wherein ſhe performed to admiration. She not only copied finely, but alſo drew exceeding well after the life in little. She died about 30 years ago, at 48 years of age, and lies buried in *Covent-Garden* church.

ROSES [*to paint in miniature*] having calk'd and drawn the red *roſe* in carmine, let your firſt lay be a very pale mixture of carmine and white; then lay in the ſhades with the ſame colour, but with leſs white, and at laſt uſe carmine alone, but it muſt be very thin at firſt, adding however to the body of it more and more, as the piece advances, and that the ſhades grow darker and darker, and this is to be done with broad bold ſtrokes. To conclude, you finiſh the ſame colour with fine ſtrokes, which muſt be turn'd like thoſe of the graving, if you copy after a print, or like the turn of the leaves of the *roſe*, if you copy after a painting or nature; ſcumbling the whole, and touching up the ſtrongeſt lights and the edges of the brighteſt leaves with white and a little carmine. You muſt always make the heart of the *roſe*, and the ſhady ſide darker than the reſt, and uſe a little indigo in ſhading the firſt leaves, eſpecially when your *roſes* are blown, to make them appear a little fading; the ſeed is done with gambooge, mixed with a little bladder-green for ſhading.

Your ſtreaked *roſes* muſt be paler than the others, that the ſtreaks may be more conſpicuous, which muſt be done with carmine, ſomewhat deeper in the ſhades, and very bright in the lights, hatching continually with fine ſtrokes.

For white *roſes* lay on white, and proceed and finiſh as in the example of red *roſes*, but with black and white and a little biſtre, and make the ſeed ſomewhat yellower than before.

For yellow *roſes* lay on maſticote, and ſhade with gambooge, gall-ſtone, and biſtre, heightening the lights with maſticote and white.

The ſtalks, the leaves, and the buds of all ſorts of *roſes*, muſt be laid in with verditer, mixed with a little maſticote and gambooge, and to ſhade them uſe iris-green, with leſs of the other colours when the ſhades are deep: the wrong ſide of the leaves muſt be bluer than the other, therefore you muſt lay on ſea-green, and mix it with iris-green to ſhade with, making the veins or ribs of that ſide lighter than the ground, and thoſe of the right ſide deeper.

The prickles upon the ſtalks, and the buds of the *roſes*, are made with ſlight touches of carmine in all directions, and thoſe on the ſtem of the tree; and larger branches are ſtruck in with verditer and carmine, and ſhaded with carmine and biſtre, making alſo the bottom of the ſtems and ſtalks more reddiſh than the tops; that is, you muſt mix green with carmine and biſtre to ſhade with.

The PASS-ROSE; this is to be done the ſame way as the *French marigold*, and the green of the leaves the ſame; but the veins muſt be of a deeper *green*.

ROSIN is a reſinous matter, prepar'd from the juice of the pine-tree, ordinarily us'd for making wax, *&c.*

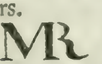
We have in the *Philoſophical Tranſactions*, the method of preparing this drug in the ſouthern parts of *France*.

Firſt, they pare off the bark of the pine, to make the ſap run down into a hole made at bottom to receive it; as the juice runs, it leaves a cream or cruſt a-top; which being tempered with water, is ſold fraudulently for white bees-wax.

When they have got a quantity of the juice, they ſtrain it through a basket, and what runs through it is the common turpentine.

What ſtays behind they mix with water, and diſtilling it in an alembick, the matter that riſes is the oil of turpentine, and the calk that remains is the common *roſin*.

ROSSO *of* FLORENCE, born in the year 1496, ſtudied with *Michael Angelo*, liv'd at *Florence*, *Rome*, and *France*, excell'd in hiſtory and architecture, died in the year 1541, aged 45 years.



MARTIN ROTA SABINIENSE ſometimes mark'd with theſe words, *Sabenzanus fecit.*

HANS ROTTENHAMMER born in the year 1564, ſtudied under *Donawer* and *Tintoret*, liv'd at *Venice* and *Bavaria*, excell'd in hiſtory, died 1604, aged 40 years.

JAMES ROUSSEAU was a *French* landskip-painter, born at *Paris*; he had a great part of his inſtruction from *Herman van Swanevelt*, who married a relation of his. He afterwards travell'd to *Italy*, where he ſtudied ſeveral years, and perfected himſelf in architecture, perſpective, and landskip, by following the moſt eminent painters in that kind, and ſtudying the antiquities. Returning to *Paris*, he was wholly employed ſome years by the king at *Marly*, and elſewhere; but leaving that ſervice upon the perſecution, he retired to *Swiſſerland*, from whence he was invited to return by M. *Louvois*, chief miniſter of ſtate, upon all the promiſes of indemnity imaginable, to finiſh what he had begun; which refuſing to do, he notwithſtanding made a preſent to the king of his drafts and deſigns for that purpoſe, and moreover nominated a perſon to perform the work. After a little ſtay in *Swiſſerland*, he came for *Holland*, from whence he was invited over to *England* by the Duke of *Montague*, who employed him at his ſtately houſe in *Bloomsbury*. Upon his coming over hither, he farther improved himſelf in the ſtudy of landskip, and added his beautiful groups of trees to the many draughts he made after nature in ſeveral parts of this kingdom; his views are commonly ſylvan and ſolid, his water of all kinds well underſtood and tranſparent, his fore-grounds great, and generally well broke; and in a word, the whole very agreeable and harmonious: his skill in architecture made him often introduce buildings into his landskips, as he did alſo ſmall figures, after the manner of *Pouſin*. Many of his pictures are to be ſeen at *Hampton-Court* over the doors, but far greater numbers at his Grace the Duke of *Montague*'s in *Bloomsbury*; where, in conjunction with *La Foſſe* and *Baptiſt* the flower-painter, he did the ſtair-caſe and many other parts of that magnificent fabrick. He had alſo due encouragement from that noble peer, who allowed him a penſion during life, which however laſted but few years after the finiſhing of his Grace's houſe. He died in *London* forty years ago. He executed with his own hand ſeveral prints in *aqua-fortis* after his own landskip, from whence we may form a better idea of this maſter's work; theſe plates were in poſſeſſion of the late Mr. *Cooper* the print-ſeller.

R. S. ſignifies *Ravignanus ſculpſit*.

R. S. M. A. }
R. S. M. F. } *See* RAIMONDI *of* Bologna.

R. S. M. R. *Mark of Ravenna* put this mark to *Raphael Sancio Urbino*'s pieces.

R. V. A. Sig. *Gaudenſis ſculpſit*, the mark of ſeveral pieces invented by *Peter de Cortona*.

Sir PETER PAUL RUBENS, born in 1577, ſcholar of *Adam van Noort*, and *Otho Vænius*, and ſtudied in *Italy*, liv'd at

Antwerp, *Italy*, and *England*, excell'd in hiſtory and portraits; died in 1640, aged 63.

RUBY, a ſparkling gem of the firſt rank among precious ſtones; there are but two places in the Eaſt, where *rubies* are found, the kingdom of *Pegu*, and the iſle of *Ceylon*.

The mine of *Pegu*, where it is found in greateſt plenty, is in the mountain *Capelan*, twelve days journey from *Siren*, the reſidence of that prince: the fineſt *rubies* brought from hence do not exceed three or four caracts; the king reſerving all the larger to himſelf.

In the iſland *Ceylon*, the *rubies* are found in a river, which deſcends from the mountains towards the middle of the iſland: ſome few are alſo found in the ground.

The *rubies* of *Ceylon* are ordinarily brighter and more beautiful than thoſe of *Pegu*; but they are rare, the king of *Ceylon* prohibiting his people to gather them, or traffick with them.

There are *rubies* alſo found in *Europe*, particularly in *Bohemia* and *Hungary*, eſpecially in the former, where there is a mine of flints of divers ſizes, which upon breaking are ſometimes found to contain *rubies*, as fine and hard as any of the Eaſtern ones.

The value of *rubies*, from one caract or four grains, is reckon'd in *Dictionaire de Commerce* as follows;

	l.	*s.*	*d.*
A *ruby* of one caract is worth	1	15	0
two caracts	9	0	0
three caracts	22	10	0
four caracts	33	15	0
five caracts	45	0	0
ſix caracts.	67	10	0
ſeven caracts	84	0	0
eight caracts	106	0	0
nine caracts	150	0	0
ten caracts	216	0	0

Rubies are uſually diſtinguiſhed into two kinds, the *balaſſe* and *ſpinelle*; but there are ſome authors who diſtinguiſh them into four kinds, *viz.* the *ruby*, *rubicelle*, *balaſſe*, and *ſpinelle*.

It is their different degree of colour that makes their different value and beauty.

The *balaſſe ruby* is of a vermeil roſe-colour; the *ſpinelle* of a flame colour.

It is ſaid that the inhabitants of *Pegu* have the art of heightning the redneſs and brilliant of rubies, by laying them in the fire, and giving them a certain proper degree of heat.

The *ruby* is form'd in a ſtony ſubſtance, or marcaſite of a roſe-colour, call'd mother of *ruby*; it has not all its colour and luſtre at once; but they come to it by degrees. At the firſt it grows whitiſh, and as it approaches to maturity, becomes *red.* Hence it comes to paſs, that we have *white rubies*; others half white, half red; others blue and red, call'd *ſapphire rubies.*

When a *ruby* exceeds twenty caracts, it may be call'd a carbuncle, the name of an imaginary ſtone, whereof the ancients and moderns have given us ſo many deſcriptions.

There are ſeveral manners of counterfeiting *rubies*; and ſome have carried the imitation to that length, that the moſt able lapidaries are ſometimes overſeen.

Furetiere aſſures us, that there have been *rubies* in *France* of 240 caracts, (tho' this is not credited.) *Tavernier* tells us he ſaw one once in the *Indies* of fifty caracts, which he had a mind to have bought. And he adds, that the king of *France* has larger *rubies* than any of the *Great Mogul.*

To make oriental RUBIES.

The *ruby*, which is a precious ſtone, diaphanous and very radiant, ought to have the colour of blood and ſcarlet, and clear *lacca*, and ſhew about the edges of its fire a little *azure* colour.

This ſtone is found in the iſland *Ceylon*, and in the river of *Pegu*, in a rocky matter of a roſy colour, which is the *matrix*, wherein it is generated and nouriſhed. And if that rocky matter be tranſparent, it yields the *balaſſe ruby.*

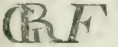
Sometimes there are found ſuch fine and large *rubies*, that ſome have miſtook them for carbuncles. If any *ruby* ever merited that name, it was that of Queen *Elizabeth* of *Auſtria*, Dowager of *Charles* IX. which after her death ſhe left to the Emperor *Rudolphus* II. her brother. It had been purchas'd long before for 60,000 ducats, which was in thoſe times a very conſiderable ſum.

To imitate this fine colour, take four ounces of the matter, prepar'd with natural cryſtal, and *Saturnus glorificatus*, two ounces of *crocus Martis* prepar'd, one ounce of *verdigreaſe*, two ounces of *Mercury* calcin'd *ad rubedinem*, and two ounces of *ſal-gem*, reduce all to fine powder, mix them together, put them into a crucible, cover it, and lute it, and ſet it in a glaſs-houſe furnace for three days; then take it out, and ſet it into the furnace, where glaſſes are ſet to anneal, there to cool by degrees for twelve hours; then break the crucible, and you will find the matter ting'd of a fine *ruby* colour, which you may divide, cut, and poliſh.

To make Balaſſe Ruby.

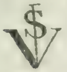
This precious ſtone is of the nature of a *ruby*, ſince it is found in the ſame matter as that; it is a very bright colour, reſembles a vermilion roſe and crimſon, being mix'd of a natural red, and of a sky-colour; we will now ſhew the way to imitate it

Take ſix ounces of *Saturnus glorificatus* mixed with natural cryſtal, half an ounce of *crocus Martis*, half an ounce of *Mercury* calcined *ad rubedinem*, two drachms of *ſal-gem*, the whole reduced to an impalpable powder, and mixed well together. Then put it in a crucible, cover'd cloſe and luted, and ſo into a glaſs-houſe furnace for three days, proceeding moreover as in the preceding article, and you'll have a very fine matter the colour of a *balaſs ruby*.

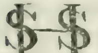
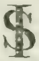
 GUIDO RUGGERI *fecit*, is the mark of ſeveral pieces, painted at *Fontainbleau* by Abbot *Primaticcio*, and engrav'd by the above-mentioned, who accompanied him into *France*.

S.

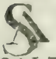
ANDREA SACCHI born in 1601, ſcholar of Cavalier *Gioſeppini Albani*, liv'd at *Rome*, excell'd in hiſtory and architecture, died in the year 1661, aged 60 years.

 JUSTUS SADELER us'd this mark: at other times he added *Sadeler* I S *exc.*

SADNESS, *ſee* SORROW.

 or  SAENREDAN, a *Dutchman*, us'd this mark; he ſometimes us'd the letter I, with an S entwin'd about it, his chriſtian name being *Hans* or *John*; he died in the year 1607.

A T S ANTHONY SALAMANCA, or *Ant. Sal. exc.* 1543.

 ANDREA SALMINCIO of *Bologna*, an engraver and ſcholar of *Valeſio*'s, us'd this mark.

SALT-PETRE is a kind of ſalt, both natural and factitious, of very great uſe in dying, the making of glaſs, and of *aqua fortis*, for the diſſolution of metals.

The minute parts of *ſalt-petre*, or its cryſtals, are in the form of needles, tho' ſome will have them to be triangular, as thoſe of *alum* are triangular, and thoſe of *common ſalt* cubical.

When they are perfect, they are ſaid to be fiſtulous or hollow, like *capſulæ*.

Of natural *ſalt-petre* there are two kinds; the firſt form'd by a natural cryſtallization of ſaline ſulphureous juices, diſtilling in caverns, or along old walls.

This is what is call'd *ſalt-petre of the rocks*.

The ſecond kind of natural *ſalt-petre* is produced from the water of a dead lake in the territory of *Terrane* in *Egypt*, call'd the *Nitrian waters*, exalted and concocted by the heat of the ſun, much after the manner of our bay-ſalt.

Artificial, or *factitious*, *ſalt-petre*, is alſo principally of two kinds;

The firſt is call'd by ſome *mineral ſalt-petre*, and is found in ſeveral places of the kingdom of *Pegu*, and about *Agra* in villages, which were antiently populous, but now deſart.

It is alſo found in ſome places along the banks of the *Wolga*, that famous river, which after it has watered a good part of *Muſcovy*, empties itſelf into the *Caſpian-Sea*.

The natural *ſalt-petre* is drawn from three different kinds of mineral earths, *black*, *yellow*, and *white*.

The beſt is that drawn from the *black*, as being pureſt from *common ſalt*, and ſtanding not in need of any purifying, after it comes to us, to fit it for making gun-powder, as the reſt do.

The method of working it is as follows;

They dig two flat pits, one of which they fill up with the mineral earth, turning water upon it for ſome time, and then tread it with their feet into the conſiſtence of pap, and then let it ſtand two days for the water to imbibe, and extract all the ſalt out of it.

Then they paſs the water into another pit, where being let ſtand for ſome time, it ſhoots and cryſtallizes into *ſalt-petre*.

This is boil'd once or twice, according as they would have it more or leſs pure, keeping continually ſcumming it, and filling it out into pots, containing each about twenty-five or thirty pounds each, and expoſing theſe to the air in clear nights; by which means, if there be any impurity, it ſinks to the bottom; afterwards they break the pots, and dry the ſalt in the ſun.

Mr. *Homberg* obſerves, that all the *ſalt-petre* we now have, is drawn either from earths moiſtened and manur'd with the excrements of animals, or from old walls, and the plaiſter of ruined buildings, which have been fill'd with ſulphureous matter, as well from the animals, which inhabited them, as the ſoot penetrating them, and the air encompaſſing them. But however we uſually diſtinguiſh *ſalt-petre* into *natural* and *factitious*.

The ſecond kind of *artificial* or *factitious ſalt-petre* is that which is prepar'd from nitrous matters, collected in old buildings, dove-houſes, the middle of ancient ruins, *&c.* by means of *lixiviums* or lyes made of wood-aſhes, and ſometimes of thoſe of herbs.

Of this there are great quantities made in *France*, particularly in the arſenal at *Paris*, where there is a corporation of *ſalt-petre* makers appointed for the purpoſe.

The *ſalt-petre* gain'd thus, they refine by boiling it three or four times, and paſſing it ſucceſſively through ſeveral lyes.

Some naturaliſts pretend that the earths, which have already ſerv'd for *ſalt-petre*, may be re-animated, and made fit to ſerve again, by keeping them covered for twelve or fourteen years, and watering them with the ſcum, *&c.* of the *ſalt-petre*, and even with brine.

Good common *ſalt-petre* ſhould be well clean'd, white, dry, ind as free of *ſalt* as poſſible: The beſt refin'd *ſalt-petre* is that vhoſe cryſtals are the longeſt, largeſt, and fineſt.

The philoſophers generally allow the air to be impregnated vith a *volatile nitre*, or *ſalt-petre*, which is thence communicated to plaiſter, mortar, *&c.* It is probable it may derive it from ſoot and ſmoke, which are actually found to abound with voatile ſalt of a nitrous nature.

Dew and rain are ſuppos'd to fertilize the ground principally, by their bringing down this nitre.

Salt-petre has a property of rarifying or expanding itſelf to a prodigious degree. It is hence that gun-powder derives its force, of which *ſalt-petre* is the principal ingredient.

It is computed, that when inflam'd, it takes up above 10,000 times the ſpace, that it poſſeſs'd before.

FRANCESCO SALVIATI, or FRANCESCO *de* ROSSE, born in the year 1510, ſcholar of *Andrea del Sarto*, and *Baccio Bandinelli*, liv'd at *Rome* and *Florence*, excell'd in hiſtory and portraits, died in the year 1563, aged 53 years.

RAPHAEL SANCIO *da* URBINO, prince of the modern painters, born in the year 1483, ſcholar of his father *Giovanni*, and *Pietro Perugino*; for colouring, of *Fra. Bartolomeo.*

To dye SAND-COLOURS.

To dye a Sand-colour.

Take water a ſufficient quantity, *nut-galls* in powder one pound, *madder* ſix ounces, *fuſtick* four ounces; let them boil and enter your cloth, (twenty yards of broad cloth;) let it boil two hours, and handle it, and ſo cool it, add *copperas* four ounces; enter your cloth at a boiling-heat, let it boil a quarter of an hour, and handle it, and ſo cool it again. If you will have it ſadder, put in more *copperas*; enter your cloth again, and boil another quarter of an hour, cool and waſh.

Another Sand-colour.

Take water a ſufficient quantity, *red-wood* ground two pound and a half, ſumach one pound; enter your cloth, boil two hours, and cool; add *copperas* two pounds, enter your cloth again, and ſadden as you think fit, *&c.*

Another Sand-colour.

Take water a ſufficient quantity, *nut-galls* one pound in powder, boil them a little, then add *red-wood* ground *q. ſ. viz.* according as you would have the ſand-colour, light or dark; enter your cloth, boil an hour, and handle it. If you would have it darker, add a little wood-ſoot, enter your cloth, and boil pretty well, and cool; after, ſadden as you pleaſe with *copperas.*

SANDARACH is a white gum, oozing out of the trunk and thick branches of the great Juniper-tree, by inciſions, made in the heats of the ſummer.

The little or common juniper yields very little *ſandarach*; its fruit yields wines, oils, ſalts, ſpirits, and extracts of ſome repute in phyſick. It is alſo a neceſſary ingredient in varniſh.

The beſt is in fine white tears, free of duſt; ſome will have it, that the *ſandarach* of the juniper is not the right, but only that of the *oxycedron*.

SANDEVER is the droſs of glaſs, or the ſcum that ariſes from the aſhes of the herb *Kali*, us'd in the making of glaſs.

SANDIX a kind of minium, or rather red maſticote, made of ceruſs calcin'd and rubefied, call'd alſo a factitious *ſandarach*. It is but little us'd in painting, the real minium or *vermilion*, to which it is ſubſtituted, making a much better, brighter, and moſt durable colour.

SANGUIS DRACONIS, *or* DRAGON's BLOOD, a gum. The *Indian dragon's blood* is a gum, that diſtils or drops from the trunk of ſeveral trees, whoſe leaves are like ſword-blades of half a foot long, and of a green colour; at the bottom of which grow round fruit, of the ſize of our cherries, that are *yellow* at firſt, and afterwards *red*, and of a beautiful *blue* when ripe; of which, when you have taken off the firſt or outward skin, it appears like a ſort of *dragon*; and thence the tree is call'd *dragon*, and the juice *dragon's blood*.

The inhabitants of the country cut the trunks of the trees, and there preſently flows a fluid liquor, that is as *red* as blood; which hardens as ſoon as the ſun is gone off it, and forms itſelf into little brittle tears or crumbs, of a fine *red* colour.

When the firſt ſort is fallen, there drops another, which is ſometimes brought wrapt up in the leaves of the ſame tree, of the figure and ſize of a pigeon's egg, or of the length and thickneſs of one's little finger.

Chuſe *dragon's blood* in little tears, clear and tranſparent, and very brittle, (but the beſt ſort is very ſcarce.) That which comes in little reeds or flags, ought to be dry and eaſy to break; and which, when ſcor'd on paper or hot-glaſs, leaves behind it a beautiful red ſtain; upon which account, anciently, they us'd it to paint glaſs red.

This being diffus'd, or digeſted, in ſpirits of wine, yields a delicate blood-red colour; but in water, oil, or other liquors, ſcarce any colour at all.

This gum being finely ground, is us'd by goldſmiths for enamel; by jewellers to ſet foils under their precious ſtones for their greater luſtre; by painters, varniſhers, and japanners, to make varniſh or japan, by mixing it with *common* or *ſhell-lac*, or *ſeed-lac* varniſh.

The *dragon's blood* of the *Canaries* is a gum, that flows from the trunk and large branches of two different trees, after having been cut, the one of which has a leaf like the pear-tree, but a little longer; and the flowers bear a reſemblance to the tags at the end of long laces, of a very fine red.

The leaves of the other come nearer to thoſe of the cherry; and the fruit is yellow on the edges, of the bigneſs of an hen's egg, in which is found a nut of the ſhape of a nutmeg, which contains an almond or kernel of the ſame figure and ſize.

The iſlanders cut the trunks of thoſe trees, from whence drops a red gum, which they make into balls of different ſizes. Some ſoften the *dragon's blood* by the means of hot water, and ſo put it into reeds, in the ſame manner as thoſe that come from *India*.

The *Dutch* furniſh us with a ſort of *dragon's blood*, which is in flat cakes, of a very deep red, and ſhining, as well on the outſide as within; which being broke, is of a very fine red colour.

This *dragon's-blood* is nothing elſe but a mixture of the true *dragon's-blood* with other gums; which is ſo apparent, it is eaſy to diſcover, by breaking the mats, and caſting it hot upon palm-mats.

There is alſo another ſort of this brought from *Holland*, made of *gum Arabick*, or that of *Senega*, with a tincture or dye of the *Fernambouke Braſil*. But theſe two ſorts being counterfeits, ſhould be avoided, as not being comparable with the true.

To make glaſs of a SAPPHIRE *colour*.

To imitate the colour of *ſapphire* in glaſs, which is of a clear and tranſparent blue, you muſt put to half an hundred pound of frit of *rochetta*, half a pound of *zaffer* prepar'd, with half an ounce of *manganeſe* of *Piedmont*, alſo prepared, as we have ſhewn: well mix theſe powders with the frit, then put the whole into a pot in a furnace, letting the glaſs be well melted and purified; for the longer it remains on the fire, it becomes ſo much the finer, if you take care to take it out from time to time. Then mix it very well, and make an eſſay of the colour; and if it be not full enough, augment or diminiſh it as much as you think fit; then the glaſs may be wrought, and you will have a *ſapphire* of the colour of the double violet of *Conſtantinople*, which the ſmall doſe of *manganeſe* produces.

To give glaſs a finer Sapphire *colour*.

Glaſs will have a much fairer *ſapphire* colour, if in the room of frit of *rochetta*, you take good cryſtal frit, and add to it the ſame doſe of powder, as in the preceding article. Of this glaſs thus tinged, you may make what works you pleaſe. You muſt not put the powder of *manganeſe* and *zaffer* on the melted glaſs, but mix it with the frit, as we have noted: for the colour the melted glaſs takes, is not ſo fine, as when the materials are firſt mixed.

To make a paſte for Sapphire *colour.*

The *ſapphire* is very much eſteemed for its beauty, which is a very clear sky-colour, and pleaſant to behold. There are ſome whitiſh, like diamonds, others very blue, and ſome violet colour; the ſtone is ſoft, but eaſy to harden.

To make this paſte, take two ounces of natural cryſtal prepar'd, four ounces and a half of *minium*, twenty-ſix grains of the blue ſmalts the painters uſe: the whole being well-pulverized, put them in a crucible, and cover and lute it well; then put them in the furnace to bake, as long time as before preſcribed; and you'll have a fine violet colour approaching blue.

Another oriental Sapphire.

The paſte for this *ſapphire* will be nearer oriental than the former; take two ounces of natural cryſtal prepar'd, ſix ounces of *minium*, to which add two ſcruples of *zaffer* prepared, and ſix grains of *manganeſe* alſo prepared; the whole reduced to a fine powder: mix them well together, and put them in a crucible, and cover, and lute it well; then put them in the furnace to bake, the ſame ſpace of time as before ſhewn, and you'll have an oriental *ſapphire* of a very fine violet colour.

To make a deeper oriental Sapphire.

This paſte for *ſapphire* will be of a deeper colour than the former, you muſt put in two ounces of cryſtal prepared, five ounces of *minium*, forty-two grains of prepared *zaffer*, and eight grains of *manganeſe* of *Piedmont* alſo prepared; the whole reduced to an impalpable powder, and mixed well together.

Moreover proceed, obſerving well all circumſtances, and you'll have a *ſapphire* deeper than the preceding, ſomewhat tending to a violet colour, which you may work, poliſh, and ſet.

Another very fine blue Sapphire.

The blue colour of *ſapphire* is no leſs agreeable than the violet, and it is the male of its kind. To make it, take one ounce of cryſtal in powder, add to it a drachm of ſalt of *vitriol*, three grains of *verdigreaſe*, one grain of *azure*; an ounce, one drachm and four grains of fine ſalt of *tartar*; the whole in fine powder: put it into a crucible, covered and luted, to be baked and purified, as we have heretofore ſhewn, and you'll have a very fine blue *Sapphire*, &c.

Another fine Sapphire.

The colours of theſe *ſapphires* being different, by the doſe and mixture of the ingredients, we will ſhew each in a chapter by itſelf.

Take two ounces of powder of *cryſtal*, two ounces of fine ſalt of *tartar*, five drachms twenty-four grains of *verdigreaſe*, and thirty-two grains of *azure*; the whole reduced to impalpable powder, which you muſt ſet to bake and purify in a covered crucible in a glaſs-houſe furnace, as we have ſaid before, and you'll have a very fine *ſapphire.*

The way to make a violet Sapphire.

We ſhall ſhew ſeveral ways of making *ſapphires* of our cryſtal of different colours. To make this, take one ounce of powder of *cryſtal*, one drachm of ſalt of *vitriol*, and nine drachms of fine ſalt of *tartar*, the whole in fine powder; then proceed further, as we have ſhewn in the preceding chapter, and you'll have a *ſapphire* of a very fine violet colour.

To make an oriental Sapphire.

To imitate this precious ſtone with the matter prepared with *Saturnus glorificatus* and natural cryſtal, take ten ounces; add to them two drachms of the calx of gold, (*ſee the calcination of* GOLD;) mix theſe powders well together, and put them into a crucible covered with another: let them dry, and then ſet them in a glaſs-houſe furnace for three days, and do all that is directed as to the *oriental ruby*; and that maſs will be a very fair *oriental ſapphire*, which cut and poliſh at the wheel.

SARDOIN, or *Sardonian ſtone*, ſo call'd of *Sardinia*, is a precious ſtone of a blood-colour, half tranſparent; the ſame with that which is otherwiſe call'd a *cornelian*.

The moſt beautiful *ſardoins* are thoſe brought from about *Babylon*; thoſe of *Sardinia* are of the ſecond claſs.

There are other *ſardoins*, and not contemptible ones, found near *St. Mauro* in *Albania*; and other very ſmall ones about the *Rhine*, in *Bohemia*, *Sileſia*, &c.

To give them the greater luſtre, it is uſual in ſetting them to lay ſilver leaf underneath. This ſtone is in moſt uſe for ſeals, becauſe it graves eaſily, and takes a fine poliſh.

SARDONYX, a precious ſtone, that partakes partly of the *agate* or *onyx*. It is reddiſh, bordering on white, like the nail of the hand; in ſome the red inclines to yellow. It is brought from the *Eaſt-Indies*, *Arabia*, and *Bohemia*.

ANDREA DEL SARTO, born in the year 1478, ſcholar of *Pietro di Coſimo*, liv'd at *Florence*, excell'd in hiſtory-painting; died in the year 1520, aged 42 years.

SASHES *for windows as clear as glaſs.*

Take the fineſt vellum, or ſlink skin, without knots or flaws, ſeethe it with fine powder of pumice-ſtone well ſifted, and having ſtretch'd the skin on a frame a little wet, let it dry in the ſhade, that it may harden the better; then take two parts of *nut-oil*, and one of *linſeed*, and a little glaſs finely powdered, and two parts of fair water, and boil them all together in a glaſs on a tile, pretty near the fire, 'till the water evaporate; then with this bruſh over the ſaſhes or vellums, and dry them moderately in the ſun, and they will be very clear and transparent, giving a more true and certain light to do buſineſs by than glaſs.

The manner of painting Cloth, or Sarſnet Saſh Windows.

Let the cloth or ſarſnet be firſt ſtrain'd tight to the frames, and there made faſt; and when they be thoroughly dry, varniſh them over with the following tranſparent varniſh thus made.

Take a pound of good clear nut-oil, put it into an earthen pipkin, and add to it half a pound of good ſilver litharge in fine powder; ſet it on a ſmall fire, but not to boil, and let it ſtand hot at leaſt twelve hours, ſtirring it often in that time, (this adds a drying quality to the oil.) When it has ſtood thus long, pour it off from the litharge by inclination; then take a pound and a half of the cleareſt white roſin, beat it to powder, and mix it with the oil on a ſlow fire, always ſtirring it till the roſin be diſſolved; then take it off, and put into it a pound of good clear *Venice* turpentine, and ſtir them all well together; then with a good bruſh let your ſaſhes be thoroughly varniſh'd over with this mixture, ſo that they may appear all over clear and tranſparent.

When this varniſh is dry, then you may paint upon them what fancy you pleaſe with oil-colours, but landſkip is moſt common and natural; for which purpoſe, the colours you mix ought to be ſuch as are of a fine body, and apt to become tranſparent.

For theſe purpoſes, lake makes an excellent tranſparent ruby colour, and diſtill'd verdigreaſe makes an incomparable tranſparent green, orpiment makes an excellent tranſparent gold colour; umber and yellow oaker will become indifferent tranſparent, if thinly mixt: but for the reſt, there are none that will lie clear in this work, but only according to the very thinneſs of their mixture with the oil.

The aforeſaid varniſh, as it is clear of itſelf, is an excellent varniſh for paper windows, being much more tranſparent than any other compoſition, and more laſting; for the roſin and turpentine being made tough, when dry, by means of the oil mixt with it, does more powerfully reſiſt the injuries of all weather than oil alone.

If any are troubled with weak eyes, and cannot endure a bright light, this varniſh mixt with diſtill'd verdigreaſe, and paper windows, or ſarſnet ones done over with it, will make an incomparable green light, very comfortable to the ſight, and of great benefit to ſuch as love not too much brightneſs: a note of good uſe, eſpecially to all great ſtudents, whoſe ſight is often much impair'd and weaken'd by poring too much upon their books; the whiteneſs of the paper being obſerv'd to be often a great enemy to the ſight of ſome men, the inconveniences of which, ſuch a green light as this now mention'd, will infallibly prevent, beyond green reading glaſs ſpectacles, or any other contrivance, yet found out; the like benefit may ſome tradeſmen alſo receive from it.

Colours for painting SATTINS.

For a *black ſattin* uſe lamp-black, ground with oil, and temper'd with *white lead*; and where you would have it ſhine moſt, mix *lake* with the *white lead.*

For *white ſattin* uſe *white lead* (ground alone) and *ivory* black; which temper light or dark.

For *red ſattin* uſe *Spaniſh brown*, (ground alone) temper it up with *vermilion*; and where it ſhould be brighteſt, mix *white lead* with the *vermilion.*

For *green ſattin* uſe *verdigreaſe*, (ground alone) mix it up with *white lead*; and where you would have it brighteſt, add a little *pink*; and where deepeſt, a little more verdegreaſe.

For a *yellow ſattin* uſe *maſticote*, *yellow oker*, and *umber* (each ground by themſelves) and where it ſhould be darkeſt, uſe *umber*; where brighteſt, *maſticote* alone; and where a light ſhadow, *oker.*

For an *orange-colour ſattin* uſe *red-lead* and *lake*; where ſaddeſt, uſe *lake*; and where lighteſt, *red-lead.*

For *blue ſattin* mix *ſmalt* and *white lead*; heighten for the ſaddeſt with *ſmalt*, and lighten with *white lead.*

For *purple ſattin* uſe *ſmalt* alone; and where it ſhould be brighteſt, *white lead.*

For *hare-colour ſattin* mix *umber* and *white lead*; and where is the greateſt ſhadow, uſe *ſea-coal black* mix'd with *umber*; and where brighteſt, more *white lead.*

SATURN was repreſented by the *Romans* in the form of an old man, holding a ſcythe or hook in his hand; which ſome take to repreſent *Time*, as is alſo intimated by his name Χρόνος, *Cronos.*

He was alſo repreſented as a very aged man, as one who began with the beginning of the world, holding in his hand a child, which he ſeems greedily devouring.

By this is ſignified the revenge he took for his being expel'd heaven by his own children (according to the mythology of the poets.) Thoſe who eſcaped his fury, were only four; Jupiter, Juno, Pluto *and* Neptune: *by which are ſhadow'd forth the four elements,* Fire, Air, Earth *and* Water; *which are not periſhing by the all-cutting ſickle of devouring* Time.

He has alſo been depicted as an old man, holding in his right hand a ſerpent, with the end of its tail in its mouth; turning round with a very ſlow pace: he had alſo his temples adorn'd with a green wreath; and the hair of his head and beard milk-white.

The wreath on his temples ſignifies the ſpring of the year; his milk-white or hoary head and beard, the approach of rigid winter; and the ſlowneſs of the ſerpent's motion, the ſlow revolution of the planet Saturn.

He is alſo deſcrib'd by *Macrobius* with the heads of a lion, a dog and a wolf.

By the lion's head is ſignified the time preſent; (which is always the ſtrongeſt, for that which is, muſt needs be more powerful than that which is not:) by the dog's head, the time to come; (which always flatters and fawns upon us, and by whoſe alluring delights we are drawn on to vain uncertain hopes:) and by the wolf's head, the time paſt; (which greedily devours whatſoever it finds, leaving no memory thereof behind.

The ſame author tells us, that among the reſt of his deſcriptions, he is repreſented with his feet tied together, with threads of woollen.

By which is ſignified, that God *does nothing in haſte, nor chaſtiſes raſhly the iniquities of mankind; but proceeds ſlowly and unwillingly, to give them time and leiſure to amend.*

Euſebius tells us, that *Aſtarte* (the daughter of *Cœlum*, wife and ſiſter of *Saturn*) did place alſo upon his head two wings; intimating by the one, the excellency and perfection of the mind; and by the other, the force of ſenſe and underſtanding.

The Platoniſts *underſtand by* Saturn *the mind, and its inward contemplation of cœleſtial things; and therefore they call'd the time in which he reign'd the golden age, it being replete with quietneſs, concord and true content.*

The way to make SATURNUS called GLORIFICATUS.

This is a preparation we hold in no leſs eſteem for paſtes for gems than that of *Iſaac Hollandus*; they have ſome likeneſs, yet this laſt is more eaſy to make, and has no leſs virtue.

Take of good *litharge* or rather good ceruſe of *Venice*, what quantity you pleaſe; that which you chuſe, grind into a ſubtile powder, put it in a great glaſs cucurbit; whereunto pour good diſtill'd vinegar, as much as ſhall ſwim at the top of the matter, a hand high.

Then put this veſſel on a ſoft aſh fire, and when the vinegar is well colour'd and impregnated with ſalt of *Saturn*, decant it off into another veſſel, then continue to put new vinegar on your matter, which ſtir well with a ſtick, to facilitate the ſolution of the ſalt; and do it ſo often, that your vinegar ſhall have extracted all the tincture from the ſalt, and that colour is no more. Then take all your colour'd vinegar, rectify it four times on tartar calcin'd to whiteneſs, then filter it carefully,

fully, and put it in a glaſs cucurbit on ſand or aſh fire, where gently evaporate it till it be juſt skin'd over. Then put the veſſel into a cold place, having taken care to cover it, for fear of any foulneſs tumbling into it, and in a little time you'll find your matter in little ſtones, pure cryſtalline and fuſible, which you muſt take out of your veſſel full of holes; then put your veſſel on the ſame fire to evaporate the remaining vinegar, till it be juſt skin'd over; then ſet it in a cool place to cryſtallize as before.

When you have taken out all the cryſtals, dry them well, and reduce them to a ſubtile powder; and keep them in a veſſel well ſtopp'd, taking care to make at leaſt ten pounds. Thus you have *Saturnus glorificatus.*

Another way of making paſte for precious ſtones, with Saturnus Glorificatus.

There are ſome who uſe tranſparent flints, calcin'd; to add to *Saturnus glorificatus*, and make paſte for artificial gems; but as we eſteem natural cryſtal prepar'd, much more proper for that work, we ſhould employ it before calcin'd flints.

Take therefore of natural cryſtal prepar'd, ten pounds; of *Saturnus glorificatus*, ten pounds; the whole reduced to fine powder, which mix well together; then put it in a pot in a glaſs-houſe furnace, there to be melted and purified three days: then caſt it in a great wooden veſſel full of cold water, then dry it and put it in the furnace in the ſame pot, the better to purify. When this cryſtalline matter is melted, and clear, take it out of the pot; and when it is cool, pound it to an impalpable powder on a marble; then keep it in a glaſs veſſel well ſtopp'd, for fear of duſt falling in; and the matter will ſerve for a baſis or ſtuff to make all ſorts of artificial gems.

S. B. ſignifies *Stephen della Bella* of *Florence.*

S. B. D. *Pictor*, is ſet under an Annunciation, invented by *Peter Candido.*

S. C. ſtands for *Simon Cantarino*, call'd of *Peſaro*, painter and engraver.

The SCABIOUS to paint. There are two ſorts of this plant, *Red* and *Purple.*

The leaves of the *red* are to be painted with *Indian-lake* and a little *white*, and colour'd and finiſh'd with *lake* only, in the middle, where there is a large pod or bud, which contains the ſeed; but with an addition of a little *ultramarine* or *indigo*, to make it a little darker.

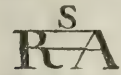
Then make little longiſh ſpots of *white* for the upper part, at a pretty good diſtance from each other; but be ſure to make them ſtronger in the lights, and weaker in the ſhades.

For the *purple*, cover them with a very pale *purple*; as well

on

on the leaves as on the pod in the middle, ſhading both with the ſame colour of a deeper teint; and inſtead of uſing ſmall *white* ſtrokes for the ſeed, make them *purple*, and make a round about each, and that all over the pod.

Let the green be *verditer* and *maſticote*, ſhaded with *Iris-green.*



RAPHAEL SCAMINOSSI painter and engraver, us'd this mark.

SCANDAL is repreſented [in *Painting*, &c.] by an old man with an open mouth, and grey beard, and his hair finely curled; a pack of cards in his right hand, and a lute in the left; a hautboy and muſick-book at his feet.

Old age denotes the more heinous offence; open mouth'd, that he occaſions *ſcandal*, not only in deeds, but in words; the cards expos'd to every one's view, is a manifeſt *ſcandal*, in an old man eſpecially, who ſhould not give ill examples to youth.

SCARLET, may be repreſented on a plane with *minium*, a little mix'd with *vermilion*; but if you have occaſion to paint a flower of a *ſcarlet* colour on a print, let your lights, as well as ſhades, be cover'd thin with *minium*, and the ſhaded parts glaz'd with *carmine*, which will produce an admirable *ſcarlet*; ſuch as is ſeen in the flower *ſcarlet Martagon*.

Of dying SCARLET, *and the* BOW-DYE.

1. To *dye a* Scarlet *colour in grain.*

Take ſtale clear wheat-bran liquor, a ſufficient quantity; *alum*, three pounds; enter twenty yards of broad cloth, and boil it three hours, cool and waſh it; take fair water, a ſufficient quantity, *hedder* or *ſtrawel* a fit quantity; let them boil well, cool them with a little water, enter your cloth and make a bright yellow, cool and waſh it again; take freſh wheat-bran liquor a ſufficient quantity, *madder* four pounds; enter your cloth at a good heat, handle it to a boiling, cool and waſh it well; take more freſh bran liquor a ſufficient quantity, *cochineal* in fine powder five ounces, *tartar* three ounces; enter your cloth, and boil an hour or more, keeping it under the liquor, then cool and waſh it.

1. *To dye a baſtard* Scarlet *colour.*

Take ſtale bran liquor twelve days old a ſufficient quantity, *alum* three pounds and a half, red *tartar* one pound diſſolved, enter twenty yards of broad cloth, boil four hours and handle it well; cool it and let it lye in the *alum* water twenty-four hours, and waſh it in fair water, (but ſome do not;) take freſh bran liquor a ſufficient quantity, beſt *madder* one pound; enter your cloth at a good heat, handle it well to a boiling, keeping but a ſlow fire, cool and waſh it well; laſtly, take freſh bran iquor a ſufficient quantity; enter your cloth again, boil it half an hour, cool and waſh it well.

3. *Another* Scarlet *colour in grain from a white colour.*

Take fair water, clear bran liquor, of each equal parts, a ſufficient quantity; *alum* nine pound and a half, *tartar* five pounds and a half, melt them; then enter thirty pounds weight of wool, yarn, flannel, or cloth; boil them four hours, take it out and let it cool, and waſh it well in fair cold water; then take grains (commonly called *cochineal*) fifteen ounces in fine powder, *tartar* fifteen ounces, freſh bran liquor a ſufficient quantity, melt them; enter your cloth, *&c.* handle it to a good heat, and your cloth being white, it will be of a good *ſcarlet* colour: let it boil two hours, handle it to a good heat, take it out and waſh it.

4. *To perform a* Bow-dye.

Take double *aqua-fortis* ten ounces, (ſome ſay ſixteen ounces) filings of pewter twenty ounces, filings of ſilver or leaf-ſilver two ounces; put the pewter into the *aqua-fortis* to diſſolve, and after that the ſilver, diſſolving them over a gentle heat; then take *cochineal* in fine powder, cream of *tartar* in fine powder five ounces; mix them with the former things, and add to them white ſtarch forty ſpoons-full, diſſolving and mixing.

Now take the liquor you intend to dye with, and put in a proportionable quantity of the former mixture, (but in a braſs veſſel lined with pewter or tin,) boil it a quarter of an hour and it is done.

To dye cloth, ſtuff, &c. SCARLET.

For every twenty pound weight of ſtuff take one pound and a half of *madder*, three quarters of a pound of *alum*, an ounce and a half of *white-wine tartar*, one ounce and a half of *arſenick*, and an ounce of *ceruſe*; boil the cloth in this mixture for an hour and a quarter; then throw away the water, and put freſh water into the kettle, adding a pint of wheaten *bran*; then rinſe the ſtuff in river water, and paſs it through the branny water; then take it out and make a liquor of a pound and a half of *verdigreaſe*, three quarters of an ounce of white wood called *immick*, and rinſe the ſtuff in it ſeveral times, having firſt ſtirr'd the *immick*-ſhavings about. Then put into the yellow liquor two pound and a half of *madder*, one ounce of *ſtorax*; let them lie one whole night to diſſolve, and after that keep ſtirring the ſtuff well about for the ſpace of an hour, keeping conſtantly a good fire under the copper; all which being done, you will have a very good *ſcarlet.*

Another. For every two pound of ſtuff to be dy'd allow two ounces of *tartar*, and one ounce of *ſal-armoniac*; pulverize them, and when the water begins to boil, put them in, and put two ounces of white ſtarch, and half an ounce of *gummi gutta* into the water; and add alſo an ounce of *cochineal*; make them boil, and then put in an ounce and a half of *aqua-fortis* When you have done this, put in the ſtuff; boil them all together, take it out cool and rinſe it.

Another. Let the ſtuffs be *alum'd*, as for crimſon in river water; let them be boil'd for two hours, then hang them out a whole night without rinſing; but in the morning rinſe them out.

Then in order to dye them, take clean *bran-water*, skim it clean, and for every pound of goods put in an ounce of pulveriz'd *tartar*; having firſt mixt one half of it with half an ounce of *cochineal*; and when the liquor, where the remaining half of the *tartar* is, hath boil'd, then put in the *cochineal*, &c.

Boil them together, afterwards add half an ounce of *aqua-fortis*, in which a ſmall quantity of *ſal-armoniac* (not bigger than a pea) hath been diſſolv'd; which muſt be put in when the ſtuffs have boil'd about a quarter of an hour; then let them all boil together for a little while, then let it cool and rinſe them out.

Another good Scarlet.

Put rain-water into a copper kettle, hang it over the fire, and for every pound of ſtuff put into a tin pot an ounce and a half of *aqua-fortis*, and an ounce and a half of powder'd *tartar*, and an ounce of *ſal-armoniac*; or if you have a little *ſcarlet* liquor, put in a little *cochineal*.

After you have done this, put them into the water, ſtir them well together, and put in the ſtuffs; let them boil for an hour, then take them out, cool and rinſe them, and dye them as follows.

For every pound of ſtuff allow one ounce of *cochineal*, two ounces of *tartar*, a quarter of an ounce of *ſal-armoniac*, all reduced to powder; let it boil an hour and a half with the before mention'd ingredients, (prepar'd as before directed) and rain water; rolling the ſtuff upon the roll as occaſion requires: then take it out, cool and rinſe it, and it will be a beautiful *ſcarlet*.

To dye a SCARLET *or* NACARET, i. e. *a lively red.*

For twenty-ſeven pound of woollen ware take two pounds of *tartar*, ſix ounces of *ſal-gemmæ*, four ounces of *ſal-armoniac*, two pound of *aqua-fortis* temper'd with *tin*, three ounces of *cochineal*; and having firſt cleans'd the ware very well, when you put theſe drugs into the kettle, put in the ſtuff, and let them boil together for half an hour.

To finiſh it.

Boil the ware gently with a pound and a quarter of *cochineal*, one ounce of *ſal-gemmæ*, one ounce of *tartar*, and half a pound of temper'd *aqua-fortis*; and then rinſe it out.

You may (if you pleaſe) uſe more of the *ſal-armoniac*, and leſs of the *ſal-gemmæ*: and alſo if you take but one pound of *cochineal*, and ſtir the goods well, cool and rinſe them, the dye will be very near as good as the other way.

Another Scarlet *dye.*

For one pound of wool take two ounces of *aqua-fortis*, one ounce of *Engliſh tin*, two ounces of *white-wine tartar*, an ounce and a half of *alum*, and half a drachm of *cochineal*; and boil the wool with them half an hour, then cool and rinſe it out.

To finiſh it.

Take an ounce and a half of *cochineal*; but if you would dye a crimſon, add a little *alum*, and a quarter of an ounce or leſs of *ſal-armoniac.*

Another Scarlet *dye.*

For three pound of wool take four ounces of temper'd *aqua-fortis*, four ounces of *tartar*; of *ſal-armoviac*, and *ſal-gemmæ*, and *cochineal*, each one ounce; boil the wool with theſe for half an hour, then cool it, and add to the ſuds an ounce and a half of *alum*, and when it begins to boil, to compleat the work, put in two ounces of *cochineal.*

This dye is deeper and more inclinable to *purple* than the former, and conſequently better.

Another Scarlet.

For ſixty-two pound of ware take two pound of temper'd *aqua-fortis*, two pound of *tartar*, half a pound of *ſal-armoniac*, and three ounces of *cochineal*; boil the cloth with theſe for half an hour, then cool it and put into the ſuds one pound of *red* or *roach alum*, and alſo the cloth a ſecond time; boil them three quarters of an hour, and then cool and rinſe it.

To finiſh it.

Add two pound of *cochineal*, and boil the ſtuff with it for a quarter of an hour, and the colour will be extraordinary good.

A lighter Scarlet.

For every four pound of ware take *aqua-fortis*, and *white-wine tartar*, of each five ounces, *cochineal* an ounce and a half; boil the goods with theſe drugs for three quarters of an hour, then take them out, pour freſh water into the kettle, and finiſh your ſtuffs as follows.

Take *cochineal* and ſtarch of each three ounces, of cryſtal *tartar* three ounces, tempered *aqua fortis* two ounces and a half, *gummi gutta* an ounce and a half; boil the water with theſe drugs for half an hour, and the work will be compleated.

Note, That all ſorts of wool and woollen wares muſt be well wetted before they are put into the ſuds; and this caution is the more eſpecially neceſſary in the *ſcarlet* dye.

To dye a deep Scarlet *fleſh-colour.*

For thirteen pound of woollen ware take two pound of *aqua-fortis*, tempered with half a pound of *tin*; two pound and a half of *white-wine tartar*, half a pound of *ſal gemmæ*, four ounces of *ſal armoniac*; boil the ware with all theſe for half an hour, then rinſe it out, and

To finiſh it,

Add one pound and a quarter of *cochineal*, one ounce of *ſal armoniac*; boil the goods with theſe for a quarter of an hour, and they will be of a very good colour.

Another Scarlet.

For twenty-ſix pounds of woollen goods take four pounds of *white-wine tartar*, one pound of *alum*, one pound and a half of *aqua-fortis*, temper'd with ſix ounces of *Engliſh tin*, and two ounces of *cochineal*; boil the goods with theſe ingredients for an hour, then cool and rinſe them.

To finiſh them.

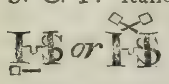
Boil a pound and a quarter of *cochineal* for a quarter of an hour, and afterwards put in the goods and boil them for a quarter of an hour more, and then rinſe them out.

You may (if you pleaſe) uſe more *alum* in the preparatory ſuds, as a pound and a half or two pounds; and you may likewiſe make an addition of half an ounce of *cochineal*, *i. e.* two ounces and a half, and uſe but four ounces of *tin*.

A liquor to ſcour Scarlet.

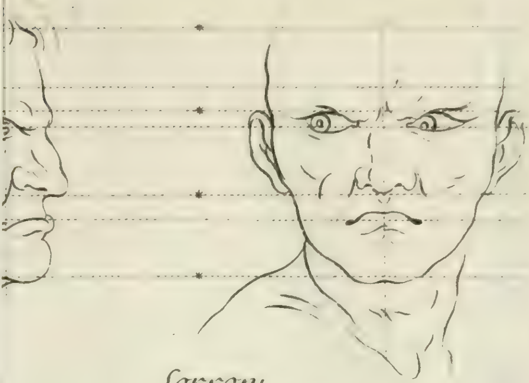
Boil a pound of *wheaten-bran* in as much liquor as is ſufficient to work ten or twelve pound of ware; and afterwards add to it, three ounces of *alum*, three ounces of *Florence orris-root* powder'd; boil all together, pour them into a clean vat or cooler, and let them ſettle till the liquor is clear; afterwards heat the clear liquor in a kettle, and ſcour the *ſcarlet* with it, and it will have a very good effect.

S. C. F. ſtands for *Stephen Carteron fecit.*

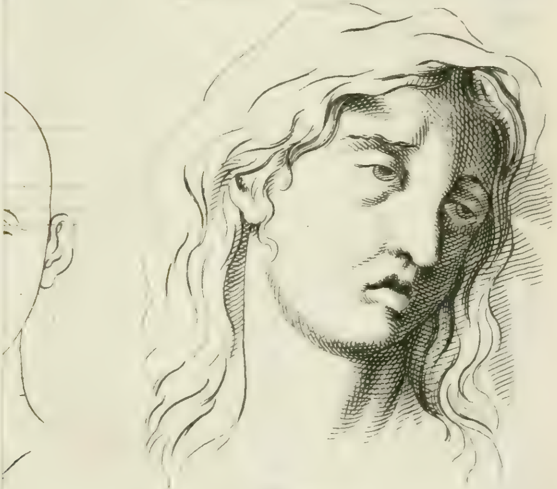


Hans Schauflig, that is *John Schauflig* of *Nordlingen* in *Germany*. This mark is found in a folio book; in which the paſſion, reſurrection, and aſcenſion of our Lord are engraven, with notes by *Ulderic Pinder*, printed at *Norimberg* in the year 1507. He engrav'd in the manner of *Albert Durer*.

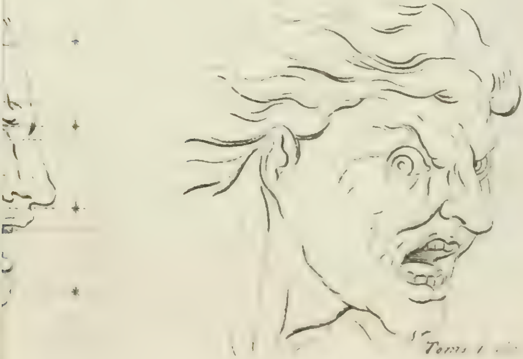
Scorn and Hatred



Sorrow



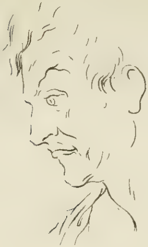
Terrour.

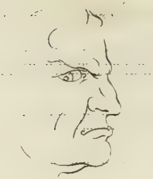


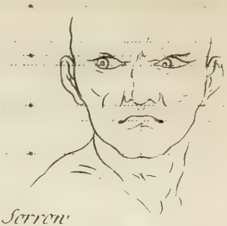
Toms

Scorn and Hatred Vol. II. Plate XVI

Scorn







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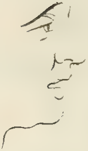

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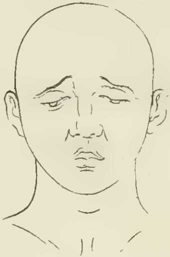

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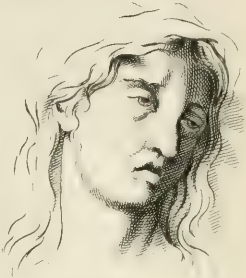

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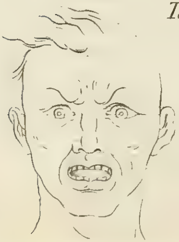

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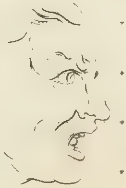

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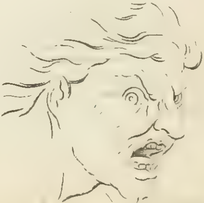
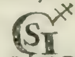


ANDREA SCHIAVONE born in the year 1522, imitated *Parmegiano*, *Georgione*, and *Titian*, liv'd at *Venice*, excell'd in hiſtory, died in the year 1682, at 60 years of age.



JOHN SCHORELS uſed this mark under the twelve different labours of *Hercules*.

SCORN, AVERSION } The motions of *ſcorn* are lively and ſtrong, and are repreſented by a wrinkled forehead; the eye-brow knit or frowning, the ſide of it next the noſe is drawn or ſinks down, and the other ſide is very much rais'd; the eye is very open, and the eye-ball in the middle; the noſtrils are drawn upwards towards the eyes, and make wrinkles in the cheeks; the mouth ſhuts its ſides ſinking down, and the under lip is puſh'd out beyond the upper one. *See the plate.*

In *ſcorn* and *averſion* the body may be drawn retiring backwards; the hands as if they were puſhing off the object which cauſes the *averſion*, or they may be drawn back, as alſo the feet and legs.

SCOURGE OF GOD is repreſented [in *Painting*, &c.] by a man in a red garment holding a ſcourge in one hand, and a thunderbolt in the other; the air being troubled, the earth full of locuſts.

His garment denotes wrath and vengeance; the locuſts univerſal chaſtiſement, as in *Egypt*; the thunderbolt ſignifies the fall of ſome who aſcend to honour by indirect and unjuſt ways; for it is crooked.

SCRATCH-WORK, the ſame as *ſgraffitti* or *ſgrafit*, a certain method of painting in *freſco*, by preparing a black ground, on which was laid a white plaiſter, which being taken off with an iron bodkin, the black appear'd through the holes, and ſerv'd for ſhadows.

This kind of work is laſting; but being very rough, is unpleaſant to the ſight.

SCRUPULOUSNESS is repreſented [in *Painting*, &c.] by a lean old man very timorous and ſhame-fac'd, looks up to heaven, holds a ſieve in both hands near a fiery furnace.

Lean becauſe continually tormented with remorſe; ſhame-fac'd becauſe guilty and timorous, as always fearing god's judgments, conſcience ſtill flying in his face; the ſieve denotes ſeparating good actions from bad, as the furnace tries metals.

SCULPTURE is an art, by which in taking away, or adding to matter, all ſorts of figures are form'd; either in *clay*, *wax*, *wood*, *ſtone*, or *metal*.

This ſort of work is done either by *hollowing*, as in metals, *agates*, and other ſtones; or working *in relievo*, as in *ſtatues* and *baſs-reliefs*.

The beginnings of *ſculpture* were with *clay*, not only to make ſtatues at firſt; but when the ſculptor undertook any thing conſiderable, to make *models*, which was, and is ſtill always done in clay or wax.

How to make figures of clay or wax.

There is no need of many tools in this ſort of work, the *clay* is plac'd on an eaſel, and the ſculptor begins and finiſhes the work with his hands.

Thoſe who are us'd to it, never make uſe of any thing but their fingers, except three or four pieces of wood, which are roundiſh at one end, at the other flat, with a ſort of claws and teeth, call'd by the *French Ebauchoir*, i.e. a ſort of hatchet; they are about ſeven or eight inches in length, thoſe with claws are to ſmooth the ſtuff, the others which have teeth are to ſcratch it, the workmen not affecting to let it appear ſleek.

They are made of *wax* thus; take a pound of *wax*, half a pound of *oker* or *ſcammony*; ſome mix *turpentine*, and melt it together with oil of olives; put more or leſs, according as you would have the matter harder or ſofter; a little *vermilion* alſo ſhould be mix'd with it, to give it a ſofter colour.

When the compoſition is made, the figure is work'd up with the hand, and thoſe *ebauchoirs*, made uſe of by ſculptors in their earthen figures.

Practice is the principal miſtreſs in this ſort of work, which at firſt is not ſo eaſy as that in clay.

Of SCULPTURE *in* WOOD.

The firſt thing that a ſculptor of wood is to do, is to chuſe the beſt wood he can, and that which is the moſt proper for the work he undertakes.

If it is ſomething great, requiring ſtrength and ſolidity, he ought to chuſe the hardeſt wood, and that which keeps beſt; but for things of moderate bigneſs, pear or apple-tree will do. And becauſe the latter are alſo very hard, when the artificers are to make ornaments that ſhould be delicate, they chuſe tender wood; but however firm and cloſe, ſuch as the *linden-tree*, which is excellent for that purpoſe; the chiſſel cutting it more neatly and eaſily than any other wood.

As to *ſtatues*, we find the antients made them of all ſorts of wood: There was one of *Apollo*, of *box* at *Sicyone:* that of *Diana* at *Epheſus* was of *cedar*.

As theſe two ſorts of wood are very hard and incorruptible, and chiefly *cedar*, which, according to *Pliny*, ſeems to be deſign'd never to have an end; the ancients frequently made the images of their gods of it.

In the temple built in honour of *Mercury*, on mount *Cyllene*, there was an image of that god made of *citron* wood, which was very much in eſteem; the image was eight foot high.

Cypreſs being a tree, which is not apt to corrupt, nor be damag'd by worms, ſtatues were alſo made of it; as alſo of the *palm-tree*, *olive-tree*, and *ebony*, of which there was a figure of *Diana* at *Epheſus*; as alſo of ſeveral other ſorts of wood.

In like manner there were images of *Jupiter*, *Juno*, and *Diana*, made of the vine-tree in other places.

When a figure or piece is well wrought, they ſay 'tis well *cut*. The beauty of it conſiſts in its being cut tenderly, and when there appears neither dryneſs nor ſtiffneſs in it.

If a ſculptor would undertake any great work, tho' it be but of one figure, he had better make uſe of ſeveral pieces of wood than of one whole piece, which as well in figures as ornaments is apt to *crack* and *cleave*: for an intire piece of wood may not perhaps be dry at heart, tho' the outſide may ſeem very dry.

It ought to have been cut ten years before the ſculptor works upon it in ſuch performances.

A ſculptor in wood uſes ſome of the ſame tools as a Joiner.

Of SCULPTURE *in marble and other ſtone.*

Sculptors, who work in *marble* or *ſtone*, make uſe of good ſteel tools, ſtrong and well-tempered, according to the hardneſs of the matter.

The firſt thing to be done, is to ſaw out a great block of marble (from another block,) of the bigneſs of the work to be perform'd, which is done with an iron ſaw very ſmooth, and without teeth, and while the marble is ſawing, the ſawyer has water conſtantly dripping on *free-ſtone duſt* into the cleft. The *free-ſtone duſt* ſerves to ſaw the marble, and the water makes it fall off in ſoft mire, when its ſtrength is gone; it alſo hinders the ſaw from heating in the friction.

The block being ſaw'd off, the ſculptor ſmooths the marble he intends to work upon, by taking away its ſuperfluities by main blows, by a *beel* and *point*. When he has ſmooth'd it fit for his work, he goes over it again, with a finer point call'd *dog's-tooth*, having two points, but not ſo ſharp as the other.

After this he makes uſe of his *gradine*, which is a flat cutting tool with three teeth, but not ſo ſtrong as the *point*: with this tool the artificer works on to advance his work; he then takes off with a ſmooth chiſſel the ſcratches the *gradine* left on the marble, and uſes it with dexterity and delicacy, to give ſoftneſs and tenderneſs to his figure; 'till at laſt taking a *raſp*, which is a ſort of file, his work is in a condition to be poliſh'd.

There are ſeveral ſorts of *raſps*, ſome ſtrait, ſome crooked, ſome harder, ſome ſofter, the one than the other.

When the *ſculptor* has ſo far finiſh'd his *ſculpture*, there being certain places, and particular pieces, which require poliſhing, he uſes *pumice-ſtone* and *putty*, to make all the parts ſmooth and ſleek: then he goes over it with *Tripoli*; and when he would give it more luſtre, rubs it with leather and ſtraw-aſhes.

Beſides the tools before-mentioned, *ſculptors* uſe the *pick*, which is a ſort of *hammer*, pointed and ſharp at one end, at the other are teeth made of good ſteel and ſquar'd, that they may be the ſtronger. This ſerves to break the marble, and is us'd in thoſe caſes, where the workman can't make uſe of both his hands to manage his *mallet* and *chiſſel*.

The *bouchard* is a piece of iron well-ſteel'd at the bottom, and pointed at both ends like a diamond, it is us'd to make an hole of equal bigneſs, which can't be done with cutting-tools.

The *bouchard* is beaten down with the *beetle*, and the points breaking the marble reduce it to powder.

Into the holes water is thrown from time to time, in proportion to the depth that is made, to waſh out the duſt of the marble, and prevent the iron from heating, which would ſpoil the temper of the tool; for the *free-ſtone duſt*, on which the tools are edged, is moiſtened only to prevent their heating, and that they may not loſe their temper by being rubbed dry. For which reaſon they wet alſo the *trepans*, which otherwiſe are apt to grow hot in trepanning.

The *ſculptors* make uſe of them to drive into, and to pierce ſuch places of their pieces, as they cannot reach with the *chiſſel*, without endangering the ſpoiling of it, and breaking ſomething or other.

When they work with the *bouchard*, they put it through a hole made in a piece of leather, which is put over the place they are hollowing, to prevent the water's ſpirting up in the workman's face.

The other tools neceſſary in *ſculpture*, are the *roundel*, which is a ſort of *chiſſel* made round; the *bouguet*, which is a ſort of pointed ſquare *chiſſel*: beſides which, the *ſculptors* muſt have a compaſs to take all the meaſures in their figures.

When the *ſculptors* undertake any conſiderable piece of work, whether *ſtatues*, *baſs-reliefs*, or the like, they always make a *model* in *clay* of the ſame bigneſs they intend the figure ſhould be; and becauſe earth or clay ſhrinks as it grows dry, and is apt to break, it ſerves only for a mould of plaiſter, in which is made figures of plaiſter alſo.

This they repair, and afterwards uſe for a *model*, from which they take all their meaſures, and govern themſelves in cutting the marble.

For the good guidance of their work, they put on the head of this *model* an immoveable circle, divided into degrees, with a *moveable* rule fix'd in the middle of the centre, and divided alſo into parts: at the end of the rule hangs a line with a lead, by which they take all the points, which are to be the ſame on the block; a-top of which hangs a line in like manner as in the model.

But there are excellent *ſculptors*, who don't approve of this method, ſaying, if the model ſtirs never ſo little, their meaſures vary, and ſo they make uſe of the compaſſes in meaſuring all the parts.

As to figures made of hard ſtones, ſuch as that of *Leu*, &c. the artificers do the ſame as in working in marble, excepting that the matter not being ſo hard, their tools are not ſo ſtrong, and ſome of them are of a different form, as the *raſp*, the *hand-ſaw*, the *ripe*, the ſtrait *chiſſel* with three teeth, the *roundel*, and the *grater*.

Sculptors have commonly a bowl-diſh, in which they temper plaiſter with the ſame ſtone as their figures are made of, and make a powder of it, with which they fill the little holes, and repair the defects they meet with in the ſtone: that of *Tonnerre* is ſo plain, that there is no occaſion for it.

If they work in *free-ſtone*, they have tools on purpoſe, for *free-ſtone* is apt to ſcale, and does not work like ſtone nor marble.

SEBENZANUS *fecit* intends *Martin Rota of Sabina*.

SECRECY is repreſented [in *Painting*, &c.] by a very grave lady all in black, carrying a ring in her mouth, as if ſhe intended to ſeal it up.

Grave, becauſe there is no greater ſign of lightneſs than to divulge a friend's ſecret; in black denotes conſtancy, never taking any other colour; the ring is the emblem of ſecrecy and friendſhip.

SECURITY is repreſented [in *Painting*, &c.] by a woman in a ſlumber, leaning one hand upon a ſpear, and the elbow of the other on a pillow.

The ſpear denotes pre-eminence and command; the pillar, the confidence, reſoluteneſs, and firmneſs of a man, when ſecure from danger; for ſecurity is the ſtrength of the mind, that no worldly affair can ſtagger; it is an immoveable force of mind in managing buſineſs; for nothing is able to divert a man from his deſign, if grounded on reaſon, who is endued with that quality.

CIVIL SEDITION is repreſented [in *Painting*, &c.] by a woman with an halbert in one hand, and a branch of ever-green oak in the other, two dogs at her feet, ſnarling one at another.

The branch ſignifies, that it being ſo ſtrong a plant, that it is not eaſy to be cut to pieces, yet by ſtriking one againſt another, they are ſoon broken; ſo the republick being well-guarded difficultly yields to an enemy, yet claſhing one againſt another by ſection, that plane will be a circle, ſo much the greater, as 'tis further from the baſe.

The way and manner of SHADOWING.

1. If it be a ſurface only, it is beſt ſhadowed by drawing lines, either ſtrait or oblique (according as the ſuperficies is) through the better half of it.

2. If it be in a body, it is a double ſhadow, and is us'd when a ſuperficies begins to forſake your ſight, as in columns and pillars, where it is doubly darkened; and repreſents to the eye, as it were the back ſide, leaving that unſhadowed to the light.

3. The triple ſhadow is made by croſſing over again the double ſhadow, and is us'd for the inward parts of things, as in clefts of the earth, wells, caves, the inſides of pots, cups, and diſhes.

4. In *ſhadowing*, let the *ſhadow* fall one way, that is on the ſame ſide of the body, leaving the other to the light.

Thus in a man, if you begin to ſhadow his right cheek, ſhadow alſo the right part of his neck, arm, thigh, ſide, leg, &c.

5. But, if the light ſide of the body be darkened, by the oppoſition of ſome other body ſtanding between the light and it, it muſt receive a contrary ſhadow, according as the light is obfuſcated, or rendred dim.

Thus, if three pillars ſtand together, that in the middle muſt receive a ſhadow on both ſides.

6. All circular bodies muſt have a circular ſhadow according to the firſt ſection (according to their form or appearance,) and the orbicular ſhadow of the object, which caſteth it.

7. The ſhadow muſt be made to grow fainter and fainter, according to the greatneſs of the diſtance from the opake body ſhadowing.

And the reaſon is, becauſe all ſhadows are pyramidal; in which caſe, ſpace of place prevails with the light againſt the ſhadow.

8. Where contrary ſhadows concur, let the meaneſt and moſt ſolid body be firſt ſerv'd; and in double and triple ſhadows, let the firſt lines be very dry, before you croſs them, for fear of blotting.

9. All perfect lights receive no ſhadow at all; but being manifeſt, are only to be made apparent by that body that receives them, whoſe ſhadow muſt be according to the efflux of light; but the colour of the light ought to agree with the medium, which receives it; whether it be air, cryſtal, water, amber, glaſs, tranſparent wine, or the like.

10. Some artiſts have us'd a little too much white, yet with a certain kind of grace, altho' their work has been much lighter than the pattern in the lighteſt part of the body; but then withal, they make the ſhadow as much too in the obſcure parts, where the light fell by reflection, to ſet forth the decay of light in the

ſame part of the body; by this means the work ſeems to be much rais'd, thereby deceiving the ſight.

11. For the light, which comes to the eye in a pyramidal form, comes with a blunter and larger angle, and ſo repreſents the object the more evidently; whence comes an admirable *eminence*; the cauſe of which is, for that there is much more ſhadow than is neceſſary in that part, where the light decays moſt.

12. So that the viſual lines failing, that part comes to the eye with a more acute angle, and therefore cannot be ſeen ſo perfectly, but ſeems to fly inwards, and ſtand farther off.

SHADOW [in *Painting*] is an imitation of a real ſhadow, effected by gradually heightening and darkening the colours of ſuch figures, as by their diſpoſitions cannot receive any direct rays from the luminary, that is ſuppos'd to enlighten the piece.

The management of the ſhadows and lights makes what the painters call the *clair obſcure*.

Of SHADOWING *a* NAKED BODY.

1. The ſhadows of the neck in a child or young woman are very fine, rare and hard to be ſeen; in a man the ſinews and veins are expreſs'd by ſhadowing of the reſt of the neck, and leaving them white; the ſhoulder is ſhadowed underneath, the brawn of the arm muſt appear full and white, ſhadowed on one ſide.

2. The veins of the back of the hand or knuckles are made with two or three hair ſtrokes, with a fine touch of the pen.

3. The paps of a *man* are ſhewn by two or three ſtrokes given underneath; in a *woman* by an orbicular ſhade, ſomewhat deep; the ribs retain no ſhadow, except the figure be repreſented lean.

4. The belly is made imminent by ſhadowing underneath the breaſt-bone and the flank: the brawn of the thigh is ſhadowed by drawing ſmall hair ſtrokes from the hip to the knee, and croſs'd again overthwartly.

5. The knee is to be finely ſhadowed underneath the joint; the ſhin-bone appears by ſhadowing one half of the leg with a ſingle ſhadow.

6. The ankle-bone appears by ſhadowing a little underneath (as in the knees) and the ſinews of it muſt ſeem to take beginning from the midſt of the foot, and to grow bigger as they approach nearer to the toes.

7. The ſhadows of the foot muſt take place according as reaſon and occaſion requires; for which (as alſo in all the former precepts) the having of good prints will be of no ſmall advantage.

Of the Origin of SHADOWS.

To define a *natural ſhadow*, we do not call it an abſolute privation of light; for this would be to form a perfect obſcurity, wherein objects would be no more ſeen than their ſhadows: but we mean by *ſhadow* a diminution of light, occaſioned by the interpoſition of ſome opake body, which receiving and intercepting the light that ſhould be caſt on the plane, it is placed on, there gives a ſhadow of its own form.

For light being of a communicative nature, diffuſes itſelf on every thing, not hid from it; particularly on every thing that is plain and ſmooth: but where there happens the leaſt elevation, a ſhadow is produc'd, which exhibits the figure of the illumined part on the plan.

The *diverſity of luminaries* occaſions a difference of ſhadows; for if the body, that illumines, be larger than the body illumined; the ſhadow will be leſs than the body. If they be equal, the ſhadow will be equal; and if the luminary be leſs than the object, the ſhadow will be continually enlarging, as it goes further off.

Of the difference of SHADOWS.

From what has been obſerv'd before may be drawn this concluſion, that the ſame object may project ſhadows of divers forms, tho' ſtill illumined on the ſame ſide; the ſun giving one form, the torch another, and the day-light no preciſe form at all.

The ſun always makes its ſhadow equal to the object, that is, projects it parallel wiſe.

It is certainly of conſequence to all painters, engravers, *&c.* to obſerve theſe rules preciſely, and not to take the rules for candles, lamps, and the like, in lieu thereof, as is too frequently done.

The ſhadow of a torch or flambeau is not projected in parallels, but in rays proceeding from a centre, whence the ſhadow is never equal to the body, but always bigger, and grows bigger as it recedes farther. It appears therefore a groſs abuſe to repreſent the ſhadow of a torch, like that of the ſun; and the ſhadow of the ſun like that of a candle, when the difference is ſo conſiderable.

There is a *third kind of ſhadow*, neither produc'd by the *ſun* nor a *torch*; but only a fine ſunny day, which wanting ſtrength to finiſh, and define its form, occaſions a dimneſs near the object. Now for this there is no certain rule, but every body conducts it at diſcretion.

All theſe ſhadows both of the ſun, of the torch, and of the *day-light* muſt appear darker than the parts of objects not illumined; and that part of the ſhadow, that is moſt remote from the object, muſt be ſtill darker than that nearer it.

To

To find the form of the SHADOWS.

Tho' perſpective is defin'd to be the repreſenting objects, which are on the ground, or a horizontal plane, upon a plane perpendicular to the horizon; yet in the buſineſs of ſhadows it is quite the reverſe, ſince we there conceive a body rais'd over the plan, which being illumin'd, caſts its own ſhadow on the plan.

To find a ſhadow, two things are propos'd, *viz. light* and a *body*,. Light, tho' quite contrary to ſhadow, is yet what gives it its being; as the body or object is what gives its forms or figure.

To conceive the nature of ſhadows more clearly, and render the practice more eaſy, it muſt be obſerv'd, that there are two points to be made uſe of; one of them the foot of the light, which is always taken on the plan the object is placed upon, the other the luminous body; the rule being common to the ſun, torch, *&c.* with this difference, that the ſun's ſhadow is projected in parallels, and that of the torch in rays from the ſame centre.

Of SHADOWS *from the ſun.*

The ſun being vaſtly larger than the whole globe of the earth, muſt give all its ſhadows pointed; by reaſon it illumines more than half of them.

In conſequence of this demonſtration, we might conclude, that all the ſun's ſhadows muſt be leſs than the bodies that project them, and diminiſhed more and more, as they recede further and further.

Now this would be true were there any relation between the body illuminated, and the body illumining; but as all objects on the earth are ſo ſmall in compariſon of that ſtar, the diminution of their ſhadows is imperceptible to the eye, which ſees them always equal; *i. e.* either broader or narrower than the body that forms them: on this account all the ſhadows caus'd by the ſun are made in parallels.

From the whole it appears, that to find the ſhadow of any body whatever oppos'd to the ſun, a line muſt be drawn from the top of the luminary perpendicular to the place where the foot of the luminary is to be taken; and through this place an occult line to be drawn through one of the angles of the plan of the object, and another from the ſun to the ſame angle; and the interſection of the two lines will ſhew how far the ſhadow is to go: all the other lines muſt be drawn parallel hereto.

The SHADOWS *of the Sun are equal in objects of the ſame height, tho' at a diſtance from each other.* See Plate, fig. 1.

Experience teaches that ſeveral ſtiles or elevations of the ſame height, remov'd to a diſtance from each other, do yet project equal ſhadows at the ſame time: I ſay, at the ſame time, for they are lengthening and ſhortening, in proportion as the ſun comes nearer, or recedes further off; one or other of which he is continually doing.

For this reaſon, when the ſhadow of an object is to be caſt any way, you muſt determine the place of the ſun, and the point underneath, to draw two occult lines from the ſame, for the extremity of the ſhadow; as here the paliſade A gives the extreme of its ſhadow in B; and if from this point B you draw a line to the point of ſight C, this line B C will be the ſhadow of the paliſade D, as well as that of A, and of all the reſt in the ſame line to the very point of ſight.

In effect, it muſt be held for a certain maxim, that ſhadows always retain the ſame point of ſight as the objects.

On the footing of this obſervation, that objects of the ſame height give equal ſhadows; if you would give the ſhadow of the paliſades E F, which are of the ſame height as A D; take in your compaſſes the diſtance A D, and ſet it on the foot of the paliſade E, by which you will have E G; then from G draw a line to the point of ſight C, and thus you are to proceed, tho' the walks were infinite.

Tho' the ſun is made to appear in the firſt figure, it muſt not be imagined that he is ſo near the objects. My intention was to ſhew, that the rays proceed from him, when at ſuch a height, tho' far without the limits of the piece.

As in this ſecond figure, which yet has the line, for the foot of the ſun A B, and that of the rays of the ſun C; by reaſon that thoſe are always required for finding the extremities of the ſhadows. *See fig.* 2.

The ſhadow of the object O is found by continuing the line A B, and making it riſe over the ſteps, and againſt the wall, 'till cut by the ray in the point S, by the rays paſſing over the corner of the object, and from S drawing a line to the point of ſight T.

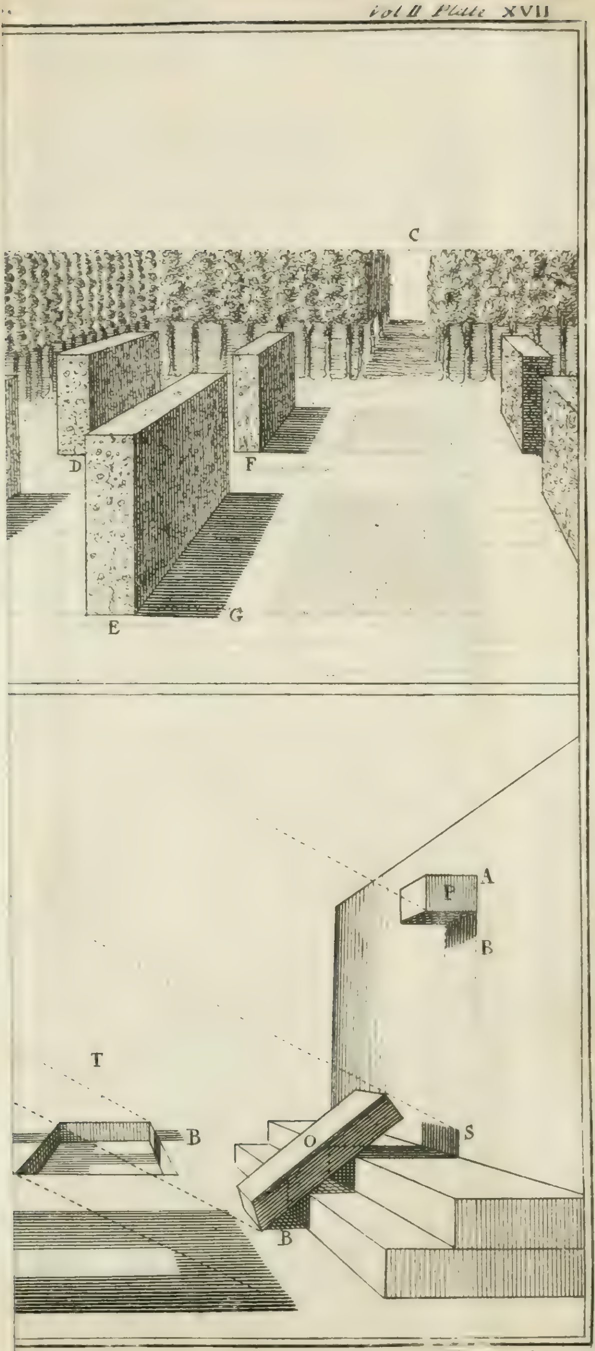
To find the ſhadow of the object P, it muſt be remembred that the foot of the light muſt always be ſuppos'd on the plan, where the object is plac'd. Accordingly the ray C cutting the little line A B, ſhews how far the ſhadow of the little object P muſt go, to be thence drawn to the point of ſight T.

The object V caſts its ſhadow all along; tho' in its way it deſcends into a ditch.

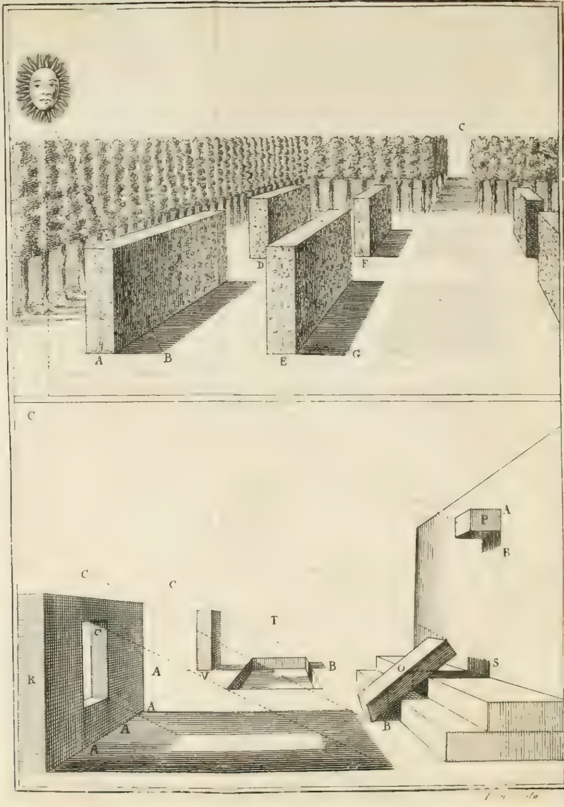
The ſhadow of the wall R is found by the ſame rule as the reſt; as appears from the lines A B, and the ray C.

SHADOWS *on ſeveral parallel planes.*

The firſt plane here is the floor, whereon the chair A ſtands; the



T·n·, sculp.


C
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the ſecond plane is the upper part of the table, parallel to the firſt, and may be either above or below it.

There might alſo be more of theſe planes, wherein to find the foot of the illuminating body, in order to come at the ſhadow of the object.

Suppoſe the foot of the illuminating body to be C, and the flame B, from theſe points C and B draw lines, through the upper and under part of the object D, which will give the ſhadow E upon the table.

To find the ſhadow of the chair A, which is plac'd on the ground, determine the foot of the luminary on the table in C on the ground; this is clear'd by the following inſtructions.

From the point of diſtance, which is here ſuppos'd to be without the limits of the paper, draw a line through the foot of the table F; then from the angle G upon the table let fall a perpendicular, cutting the line F in the point H, and from H draw a parallel to the baſe H I, which is equal to the upper part of the table, and will direct to the thing requir'd.

For drawing a line from the point of ſight K, thro' the foot of the luminary C, to the extremity of the table L; from the ſame point L, let fall a perpendicular to H I, which will give the point M.

Then from M draw a line to the point of ſight K; in which line M K will the foot of the luminary be found.

To determine the preciſe point, let fall a perpendicular from the point C, which cutting the line M K, will give the point N for the foot of the luminary.

This point N being thus found, there will be no difficulty in finding the ſhadow of the chair A; the method being the ſame as for the other objects taught before, that is, from the foot of the luminary N draw lines through all the angles of the plan of the chair, and other lines through the upper part of the chair from the luminary B; theſe latter, by interſecting the former, expreſs the bounds of the ſhadow. For the reſt, the figure gives ſufficient directions.

The SHADOW *of an erect and inverted* PYRAMID *by Torch-light.*

The ſhadow of an erect pyramid by torch-light falls, as it would by the light of the ſun; and in both caſes there is but one line, whereon the vertical point of the pyramid will be found.

Upon the planes B C D E draw the diagonals E B and D C; through the central point F, raiſe the perpendicular F A; and from the four points B C D E, draw lines to the point A, and the pyramid will be erected.

Then to find its ſhadow, draw an indefinite line from the baſis G of the illuminating body, paſſing through F; and from the central flame of the torch H, draw another line over the vertex of the pyramid in the line G F, 'till it cut the point I, which point will limit the ſhadow of the pyramid.

Laſtly, draw a line from C to I, and another from E to I, and the triangle C I E will be the ſhadow of the pyramid.

To gain the ſhadow of an inverted pyramid, draw perpendicular lines from the angular points of its baſe, and form the ſubjacent plane, by means thereof, after the manner directed for the ſun.

And from all the angles of this plane, draw lines to the baſe of the torch G; then from H, the central point of the flame, draw other lines touching all the angles of the baſe of the inverted pyramid, and dividing thoſe of the plane, whereby the ſhadow will be defined.

The different diſpoſitions and heights of SHADOWS *by torch-light.*

Shadows from the ſun are all caſt the ſame way, and have the ſame diſpoſition; it being impoſſible, that the ſun ſhould occaſion one ſhadow to tend towards the eaſt, and another towards the weſt, at the ſame time.

It is true, in different times of the day, it makes this difference: but never in one and the ſame hour.

But the torch, candle, and lamp, have always this effect; for in what place ſoever one of theſe luminaries be found, provided there be a number of objects about them, the ſhadows will be caſt various ways; ſome to the eaſt, ſome to the weſt, ſome to the north, and others to the ſouth, according to the ſituation of the objects around the luminary: the foot of which here repreſented by A, ſerves as a common centre, from which they all proceed: and the flame here repreſented by B, ſhews where they are to terminate, tho' at different diſtances; as the neareſt produce the ſhorteſt ſhadows, and the remoteſt the longeſt. *See Plate, fig.* 1.

The SHADOW *doubled.*

When two luminaries ſhine on the ſame object, two ſhadows muſt be produc'd, each of the luminaries occaſioning its reſpective ſhadow, and that in proportion to the circumſtances of the luminary.

If ſuch luminaries, when at equal diſtances, be equal, the ſhadows themſelves muſt be equal: but if there be any diſproportion, that is, if one of them be a little bigger than the other, *g. 2*

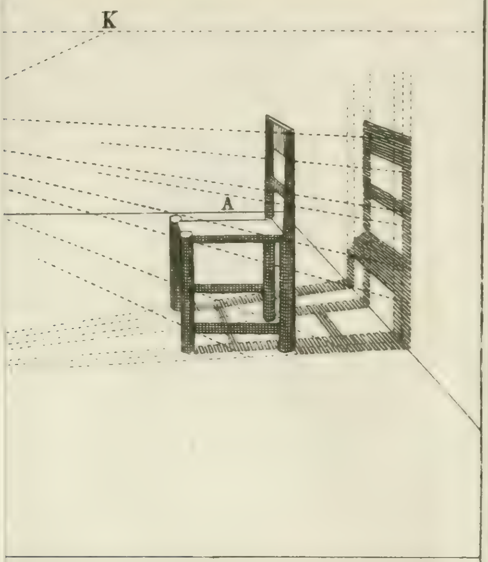
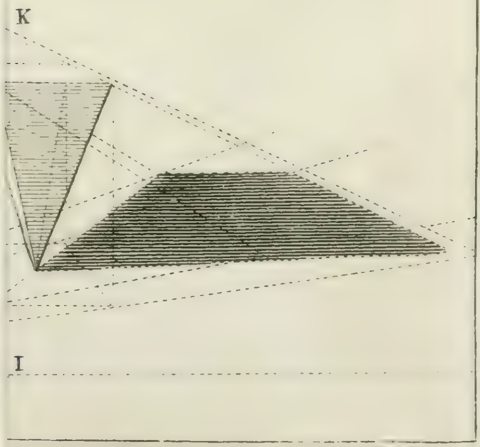


Fig. 1



T[illegible] *sculp*

Fig. 2

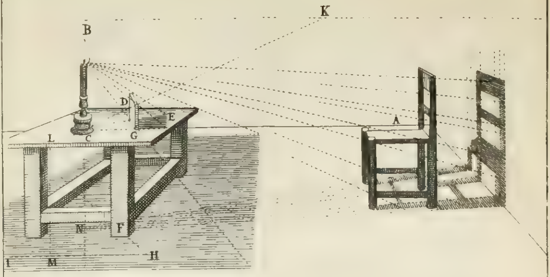
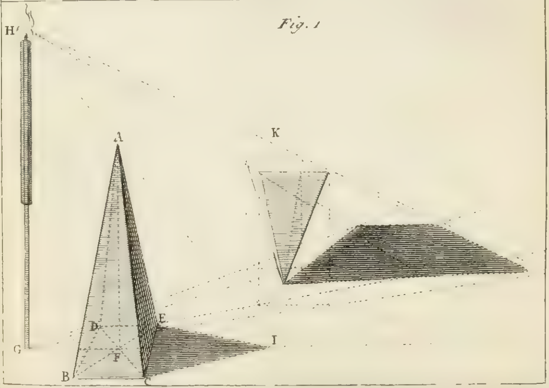
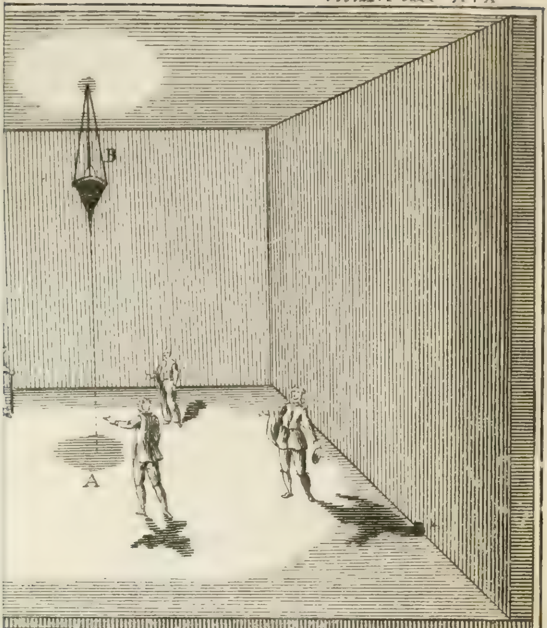
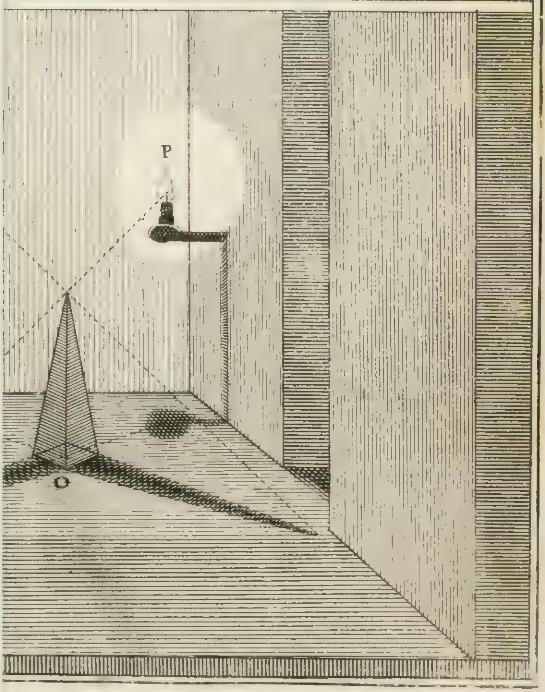


Fig. 1

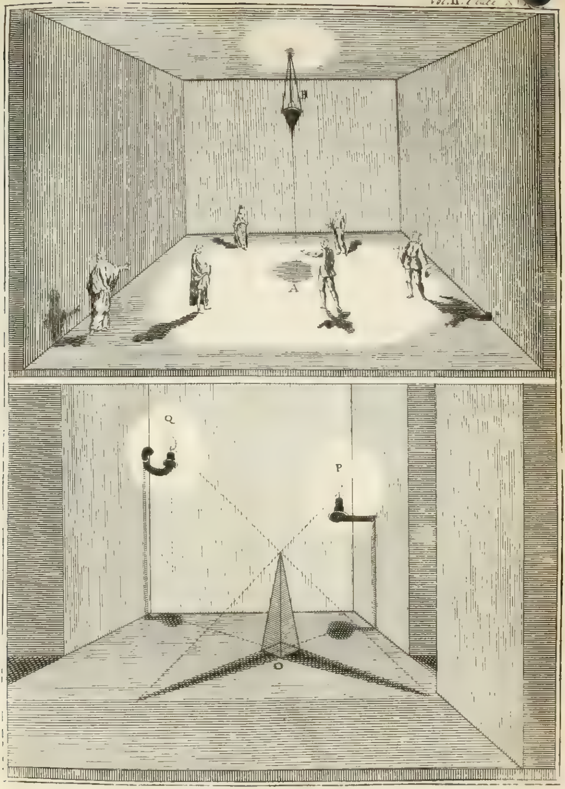


T … sculp


B
A


P
O

Vol. II. Plate X



other, or one of them a little nearer the object than the other, the ſhadows will be unequal.

Thus the object O being illuminated by two candles, the one near at hand in P, the other farther off in Q, it is evident the ſhadow of the candle P will be deeper than that of the candle Q, as is expreſs'd in the figure. *See Plate, fig.* 2.

The rules for ſuch ſhadows are the ſame with thoſe already given, both for the ſun and the torch.

The reaſon why SHADOWS *fall all one way.*

Firſt, becauſe the light does not with all its brightneſs illuminate any more than that part, that is directly oppoſite to it.

Secondly, It proceeds from the nature of the eye; for the firſt part of the body coming to the eye with a bigger angle, is ſeen more diſtinctly; but the ſecond part being further off, is ſeen by the eye in a leſſer angle.

And if you are to draw two or three men ſtanding together, one behind another, tho' all of them receive equally the light, yet the ſecond being further from the eye, muſt be ſhadowed darker, and the third more dark than the ſecond.

It is a general obſervation, that if you draw many figures together in one room, they muſt all be ſhadowed on the contrary ſide from the light, whether it comes in at the middle or end, or any where elſe.

Again, that part of the body muſt be made lighteſt, which hath the light moſt directly oppoſite to it; as if the light be placed above the head deſcending, then the top of the head muſt be made the lighteſt, the ſhoulder next lighteſt, and ſo you muſt loſe by degrees.

That part of the body, that ſtands fartheſt out, muſt be made lighteſt, becauſe it comes neareſt to the *light*, and the *light* loſes ſo much of its brightneſs, by how much any part of the body bends inward; becauſe thoſe parts, that ſtick out, do hinder the luſtre of the full brightneſs of the light from thoſe parts, that fall any thing more inward; therefore by how much one part of the body ſticks out beyond the other, it muſt be made ſo much lighter than the other; or if it fall more inward, then it muſt be made more dark.

As for ſattins and ſilks, and all other ſhining ſtuffs, they have certain bright reflections, exceeding bright, with ſudden light glances; eſpecially where the light falls the brighteſt; and ſo the reflections are leſs bright, by how much the garment falls more inward from the light.

The like is ſeen in armour, and braſs pots and kettles, or any glittering metals: you may ſee a ſudden brightneſs in the middle or centre of the light, which cauſes the ſhining nature of ſuch things.

SHAMMY } Leather, popularly call'd *ſhammy*; a kind of
CHAMOIS } leather, either dreſſed in oil, or tanned, much eſteemed for its ſoftneſs, pliancy, *&c.*

It is prepared from the skin of the *chamois*, a kind of wild goat call'd alſo *Iſard*, inhabiting the mountains of ***Dauphine***, ***Savoy***, *Piedmont*, and the *Pyreneans*.

Beſides the ſoftneſs and warmneſs of the leather, it has the faculty of bearing ſoap without damage, which renders it very uſeful on many accounts.

In ***France***, &c. ſome wear the skin crude without any preparation; it is alſo uſed for the purifying *mercury*, which is done by paſſing it through the pores of this skin, which are very cloſe. ***See*** MERCURY.

The true *chamoiſe* leather is counterfeited with common goat, kid, and even ſheep skin; the practice of which makes a particular profeſſion called by the *French Chamoiſeur*. The laſt is the leaſt eſteemed, yet ſo popular, and ſuch vaſt quantities prepared, eſpecially about *Orleans*, *Marſeilles*, and *Tholouſe*, that it may not be amiſs to give the method of preparation.

The manner of chamoiſing, *or of preparing* ſheep, goat, *or* kid skins in oil, in imitation of *Chamois*.

The skins being waſhed, drained, and ſmeared over with quick lime on the fleſhy ſide, are folded in two length-wiſe, the wool outwards, and laid on heaps, and ſo left to ferment eight days; or if they had been left to dry after fleaing, for fifteen days.

Then they are waſhed out, drained, and half-dried, laid on a wooden leg or horſe, the wool ſtripp'd off with a round ſtaff for the purpoſe, and laid in a weak pit, the lime whereof had been uſed before, and had loſt the greateſt part of its force.

After twenty-four hours they are taken out, and left to drain twenty-four more; then put in another ſtrong pit. This done, they are taken out, drain'd, and put in again by turns; which begins to diſpoſe them to take oil: and this practice they continue for ſix weeks in ſummer, or three months in winter; at the end whereof they are waſh'd out, laid on the wooden leg, and the ſurface of the skin on the wool ſide peel'd off, to render them the ſofter; then, made into parcels, ſteep'd a night in the river, in winter more; ſtretch'd ſix or ſeven over one another, on the wooden leg; and the knife paſs'd ſtrongly on the fleſh ſide, to take off any thing ſuperfluous, and render the skin ſmooth.

Then they are ſtretch'd as before, in the river, and the ſame operation repeated on the wool ſide; then thrown into a tub of water with bran in it, which is brew'd among the skins 'till the greateſt part ſtick to them; and then ſeparated into diſtinct tubs 'till they ſwell, and riſe of themſelves above the water.

By this means, the remains of the lime are cleared out: they are then wrung out, hung up to dry on ropes, and ſent to the mill, with the quantity of oil neceſſary to full them: the beſt oil is that of ſtock-fiſh.

Here, they are firſt thrown in bundles into the river for twelve hours, then laid in the mill-trough, and full'd without oil 'till they be well ſoftened; then oil'd with the hand, one by one, and thus form'd into parcels of four skins each, which are mill'd and dry'd on cords a ſecond time, then a third; then oil'd again and dry'd.

This proceſs is repeated as often as neceſſity requires: when done, if there be any moiſture remaining, they are dry'd in a ſtove, and made up into parcels, wrapp'd up in wool; after ſome time they are open'd to the air, but wrapp'd up again as before, 'till ſuch time as the oil ſeems to have loſt all its force, which it ordinarily does in twenty-four hours.

The skins are then return'd from the mill to the *chamoiſer* to be ſcour'd; which is done by putting them into a lixivium of wood-aſhes, working and beating them in it with poles, and leaving them to ſteep till the lye have had its effect; then wrung out, ſteep'd in another lixivium, wrung again, and this repeated till all the greaſe and oil be purg'd out. They are then half dry'd, and paſs'd over a ſharp-edg'd iron inſtrument, plac'd perpendicular in a block, which opens, ſoftens, and makes them gentle: laſtly, they are thoroughly dry'd, and paſs'd over the ſame inſtrument again, which finiſhes the preparation, and leaves them in form of *chamois*.

Kid and *Goat*-skins are *chamois'd* in the ſame manner as thoſe of *Sheep*; excepting that the hair is taken off, without the uſe of any *lime*; and that when brought from the mill, they undergo a particular preparation call'd *ramalling*, the moſt delicate and difficult of all the others.

It conſiſts in this, that as ſoon as brought from the mill, they are ſteep'd in a fit lixivium; taken out, ſtretch'd on a round wooden leg, and the hair ſcrap'd off with the knife; this makes them ſmooth, and in working, caſt a kind of fine nap. The difficulty is in ſcraping them evenly.

SIBYLS are, according to ſome, in number twelve; but *Martianus* will have but two, *Pliny* and *Solinus* but three, and *Salmaſius* but the firſt ſeven: but *Varro* allows ten.

They are generally repreſented as young women; yet ſome of them were old, as ſhe which ſold the books to *Tarquin*.

Theſe *Sibyls* were in high eſteem (by ſome perſons) on account of their prophecies of *Chriſt*.

SIBYLLA AGRIPPINA is repreſented [*in Painting*, &c.] as a woman in years in a roſe-colour'd garment. She is call'd by divers authors *Ægyptica.* *Suidas* relates that ſhe propheſied in *Egypt* in the days of *Pharaoh.*

Her propheſy imported, that *hands ſhould be laid on the inviſible world; his beauty ſhall not appear, his mother's womb ſhall incloſe him, and he (who is eternal joy) ſhall weep.*

SIBYLLA LYBICA was born in *Lybia* (otherwiſe call'd *Eliſſa*) and was contemporary with *Euripides.* *Lactantius* allows her the ſecond place among the *Sibyls* for her admirable predictions, *viz. the time draws on, and is not far off, when the God of light ſhall be inviron'd with the radiant beams of the Sun.* She is repreſented [in *Painting*, &c.] as an elderly woman in purple garments, crown'd with a garland of flowers.

SIBYLLA DELPHICA was ſo call'd from her being born at *Delphos.* She liv'd before the ſiege of *Troy*, and foretold the manner of that war; and propheſied of *Chriſt* as follows, *Know him for thy Lord, who is the ſon of God; a prophet ſhall be born of a pure virgin without the ſeed of man.* She is repreſented [in *Painting*, &c.] as a young woman clothed in a black garment, holding in her hand a horn.

SIBYLLA PHRYGIA is repreſented [in *Painting*, &c.] as having an old *Saturnian*, hard-favour'd face, clad in red garments; many ſuppoſe her to be *Caſſandra.* She propheſied very divinely of the day of Judgment as follows, *A trumpet (ſaid ſhe) from heaven ſhall give a very terrible and dreadful ſound; all Kings ſhall ſtand before the judgment-ſeat of God, who will at once judge both the juſt and unjuſt.*

SIBYLLA HEROPHILA is repreſented [in *Painting*, &c.] as a young woman very fair, clad in a purple garment, and having her head cover'd with a veil of *lawn:* ſhe is alſo call'd *Erithrea*, and as *Apollodorus Erithreus* writes, was a citizen of *Erithrea* in *Ionia.* She propheſied to the *Greeks* that they ſhould overcome *Troy*; and alſo of *Chriſt* as followeth, *The earth ſhall ſweat as a token of judgment; a King ſhall come from heaven, whoſe kingdom ſhall be everlaſting.*

SIBYLLA EUROPEA is ſaid to have been born in *Jeruſalem*; but the place of her birth is not certainly known. She propheſied thus, *The almighty ſhall come accompany'd with his legions of Angels, he ſhall walk over the hills and clouds, he ſhall live poorly and in ſilence, he ſhall bear rule.* She is repreſented [in *Painting*, &c.] as a comely young woman, having a high red-colour'd face, clad in a garment of cloth of gold, and a fine veil on her head.

SIBYLLA PERSICA liv'd in the hundred and twentieth Olympiad, and was born in a town call'd *Noe* by the *Red-ſea.* She propheſied as follows, O *death, thou ſhalt be trodden under feet: the ſon of God ſhall be born into the world, and he ſhall* *bring to men ſalvation; the inviſible world ſhall be made viſible.* She is repreſented [in *Painting*, &c.] as a young woman in a white veil and golden garment.

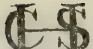
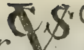
SIBYLLA SAMIA was born at *Pluten* in the Iſle of *Samos* in the *Ægean* ſea, before the birth of *Chriſt*. She is repreſented [in *Painting*, &c.] as a woman of a middle age, cloth'd in willow weeds, and holding a palm in her hand. She propheſied ſix hundred and ſixty-five years before the birth of *Chriſt*, and yet propheſied as if ſhe had liv'd in his days as follows; *O ill-advis'd and indiſcreet people of* Judea, *who did not turn to the Lord your God; you have not truly known him, but have crown'd him with thorns, and have given him gall to drink.*

SIBYLLA HELLESPONTICA was born in the territories of *Troy*, in a place call'd *Marmiſſa*, near the town of *Gergitha*. She is repreſented [in *Painting*, &c.] as a young woman of a round, lovely, freſh-colour'd face, cloth'd in green garments, holding in her right hand a pen, and in her left hand a book. *Heraclitus Ponticus* ſays, that ſhe was cotemporary with *Solon*, in the reign of *Cyrus*, about the ſixtieth *Olympiad*. She propheſied as follows, *Be comforted, O ye nations, call upon your God, your iniquities ſhall be forgiven, and you ſhall find mercy at the hands of the Lord.*

SIBYLLA TIBURTINA was born in *Italy* in a town near *Rome*, upon the bank of the river *Tibur*, from whence ſhe took her name. She was repreſented [in *Painting*, &c.] as an old woman of a hard viſage, cloth'd in a purple garment, and having in her apron the books of the *Sibyls*. She propheſied as follows; *A branch ſhall bud from a ſweet root, a flower ſhall ſpring from thence, and the ſpirit of the Lord ſhall reſt upon it.*

SIBYLLA EPIROTICA; ſhe is alſo call'd *Cimmeria*; ſhe was ſaid to be born near the *Boſphorus*; but others ſay in *Cimmeria*, a town in *Campania* in *Italy*. She is repreſented [in *Painting*, &c.] as an old woman of a hard-favour'd face in a *grotto*, cloth'd in garments of purple and dark colours. She is ſaid to have propheſied a-while after the deſtruction of *Troy*, as follows; *A virgin ſhall bring forth a ſon without the help of a man, and nouriſh him with the milk of her breaſts.*

SIBYLLA CUMANA was born in *Cuma* a town of *Campania* in *Italy*. She liv'd in the fifty-fifth *Olympiad*, in the times of *Numa Pompilius* and *Tarquinius Superbus*. She was repreſented [in *Painting*, &c.] like a grave matron cover'd with a veil, and cloth'd in robes of a blue colour, hiding her feet. She propheſied as follows, *After three days he ſhall triumph over death, return to the light, and be the firſt who ſhall give evidence to the reſurrection, thereby to ſtrengthen the faithful in the hope of eternal life.*

 *or*  CORNELIUS SICHEN uſed theſe two marks in one hundred and eight plates of the *Old Teſtament* in 1569.

LUCA SIGNORELLI DA CORTONA born in the year 1439, ſcholar of *Pietro del Borgo*, liv'd at ſeveral places in *Italy*, excell'd in hiſtory-painting, died in the year 1521, aged 82 years.

To prepare raw SILK *for dying.*

Firſt put the *ſilk* into a bag, or make it up ſo as to prevent it from being tangled; and for every pound of *ſilk* allow one quarter of a pound of ſoap; boil them together for the ſpace of two hours, and afterwards cleanſe it very well, and this being done, it being alſo alum'd, it will be fit for dying any colour.

Another way.

Take for every pound of raw *ſilk* a quarter of a pound of green or black *ſoap*, ſmear the *ſilk* very well, and thoroughly with the *ſoap*; then put it up in a linnen bag, and boil it for ſix hours.

Then take out the bag, and let the *ſilk* cool, that you may handle it the better; then rinſe it in a river or running water for a quarter of an hour. Beat the water out and rinſe it well; then dry it, and it is ready for dying.

This preparation is abſolutely neceſſary for all raw *ſilks* before they can be dyed.

How to alum *the boiled* SILK.

For every pound of *ſilk* melt a quarter of a pound of *alum* in a kettle or ſkillet, and then throw it into a tub of water; then put in the *ſilk*, and let it lie in ſteep all night.

You muſt carefully obſerve the proportion of *alum* directed before, for the quantity of *ſilk*.

To make or dye SILK *a* SILVER-*colour*.

The *ſilk* having been firſt boiled and rinſed, and taken off the ſticks, put it into a veſſel of cold water; then put in a little of the former rinſing water, and a few *galls*, in proportion to the quantity of *ſilk*; which you muſt ſtir about in the liquor, till it is brown, and then rinſe and dry it.

To dye SILK *a* SILVER-GREEN.

For every pound of *ſilk* put twelve ounces of *galls* in fair water, let them boil for two hours; then pour them into another veſſel, and ſtir the *ſilks* about in it for a quarter of an hour; then let the *ſilk* lie and ſoak in it one night, and in the morning wring it out, rinſe and beat it, and hang it out upon poles; then make another tub of liquor with a ſufficient quantity of *Provence*-wood, ſuds and cold water; ſtir the *ſilks* therein, for a quarter of an hour, then brown them with *vitriol*, *madder* or *copperas*, and wring them out and dry them.

To recover the colour of black SILK *or* CLOTH.

Boil the leaves of a forward ſummer *fig-tree* in rain or river-vater, till a third part of the water is conſum'd; waſh the *ſilk* r *cloth* in this water, and then rinſe it or bruſh it over with a ttle *alum*-water, and it will be reſtor'd to a curious fair black.

To gild SILK *and* LINNEN.

Lay parchment glue on the *ſilk* or *linnen*, &c. do this gently at it may not ſink in; then take *ceruſe*, *bole* and *verdigreaſe*, of ach a like quantity, mix and grind them upon a ſtone; then aving mixt a little varniſh with it in a glaz'd earthen veſſel, t it ſimmer over a gentle fire, and keep it for uſe.

Another of a pure gold colour.

Take the juice of freſh *ſaffron*, or for want of it ground *ffron*, and the beſt clear *orpiment*, of each a like quantity; ind them with *goat's-gall* or *gall* of a *pike* (which is better,) geſt twenty-eight days in horſe-dung, and it is done.

How to ſtiffen CAFFA *and the like ſorts of* SILK, *and give them a beautiful luſtre.*

Pound an ounce of *gum arabick*, and half an ounce of *gum agacanth*, very well in a mortar; diſſolve them in water; then oil two pound of *linſeed* in water ſo long till it becomes glu- nous, then put in the *gum*-water, make it hot and ſtrain it rough a cloth, and with a ſpunge ſmear it on the wrong ſide f the *ſilk*, taking care that the piece of *ſilk* be ſtretch'd both length and breadth, otherwiſe it will be apt to rumple.

To ſcent or perfume SILKS.

After the *ſilk* has been dyed, for every pound of *ſilk* take n ounce of *orris*, dry it well. Lay the *ſilks* in *roſe*-water in thick ſieve, and betwixt every row ſtrew powder of *orris*, and ut it up cloſe in a box or cheſt, till the next day, and the *k* will emit an agreeable odour.

How to keep SILK *from ſtaining in the waſhing.*

Heat rain-water very hot, then put into it *Caſtile*-ſoap, diſ- lve it well; then let it ſtand till it is almoſt cold, and then rinkle in a ſmall quantity of *fuller's-earth*, then ſcour out the *ks*; when you have done, clap them between dry cloths, ot ſuffering them to lie on heaps,) and they will look freſh d fair

To reſtore SILKS *of any colour that have been ſoiled or greaſed.*

Take an ounce of unſlak'd lime, and the like quantity of e aſhes of vine-branches, and as much oak-bark; mix them ell together in fair water, and make with them a kind of *ly* er a gentle fire; let this ſettle, then take the clear part, and b over the faded part with a bruſh or ſpunge, and it will in ſhort time reſtore it.

How to make a ſoap to take greaſe, ſpots, or ſtains out of SILKS, STUFFS, CLOTH, *&c.*

Take *roch-alum*, burn it well and reduce it to a fine powder, and add to it the powder of the roots of *Florence-flame* (a herb ſo call'd) about half a pound; and to theſe add a new-laid egg, and two pound and a half of cake-ſoap; make them up with fair water into round balls; and when you would take out any ſpot or ſtain, firſt waſh the place well with warm water, and then lay a laying of this ſoap upon it for three or four hours, and then waſh it off with other warm water, and in often ſo doing they will diſappear.

Another excellent and approved way.

Diſtil *wood-ſorrel* in an *alembick* with fumitory, and waſh the damag'd place therewith, and in frequently ſo doing it will reſtore it.

To take ſpots and ſtains out of very thin SILK.

Warm a pint of white-wine vinegar indifferent warm, then dip a black cloth into it, and then rub over the ſtains; afterwards ſcrape *fuller's-earth* over them, and clap dry woollen cloths under and over, placing an *iron* indifferently hot on the upper, and it will draw out the ſpot, *&c.*

To take ſpots or ſtains out of SILKS.

Bruiſe an ounce of *flax-ſeeds* in two or three ſpoons-ful of the juice of *lemon*, and add a quarter of an ounce of white *lead*, and the ſame quantity of burnt bone; mix them over a gentle fire to a thickneſs, and lay them on the ſtrainer.

SILK, a very ſoft, fine, bright, delicate thread; the work of an inſect, call'd a *ſilk-worm.* The antients were but very little acquainted with the uſe and manufacture of *ſilk.* They took it for the work of a kind of ſpider, or beetle, who ſpun it out of its entrails, and wound it with its feet about the little branches of trees. This inſect they call'd *Ser*, from *Seres* a people in *Scythia*, who kept it; whence, the *ſilk* itſelf the *Latins* named *Sericum.* But the *Ser* has very little affinity with our *ſilk-worm*, *bombyx*; the former living five years; but the latter dying yearly, envelop'd in a yellowiſh cover, or ball, which being wound out into little threads, makes what is call'd *ſilk.* The art of manufacturing *ſilk* was firſt invented in the iſle of *Cos*; *ſilk* was brought to the *Romans* from *Seres*, where the worm was a native.

This occaſion'd *ſilk* to be a very ſcarce commodity among them for ſeveral ages; 'twas even ſold weight for weight with gold; inſomuch, that as *Vopiſcus* informs us, the emperor *Aurelian* refus'd the empreſs his conſort a ſuit of *ſilk*, (which ſhe earneſtly ſollicited him for) merely on account of its dearneſs. At length two Monks, coming from the *Indies* to *Conſtantinople* in the year 555, brought with them large quantities of *ſilk-worms*, with inſtructions for the hatching of their eggs; alſo rearing and feeding the worms, drawing out the *ſilk*, and ſpinning and working it. Upon which, manufactures were ſet up at *Athens*, *Thebes*, and *Corinth*.

About the year 1130, a *ſilk* manufacture at *Palermo* was eſtabliſh'd by *Roger* King of *Sicily*, as alſo another in *Calabria*, manag'd by artificers, who were part of the plunder brought from *Athens*, *Corinth*, &c. whereof that prince made a conqueſt in his expedition to the *Holy-Land.* And by degrees, (*Mezeray* adds) the reſt of *Italy* and *Spain* learn'd from the *Calabrians* and *Sicilians*, the ordering of the *ſilk worms*, and working of the *ſilk:* and afterwards the *French*, by right of neighbourhood, a little before the reign of *Francis* I. began to imitate them. The great advantage this new manufacture turn'd to, made our K. *James* I. to be very earneſt for its being introduced into *England.* Accordingly it was ſeveral times recommended from the throne, in the moſt earneſt terms, to plant mulberry-trees, *&c.* for the propagation of *ſilk worms*; but, unhappily, without effect: tho' from the various experiments, that are found in the *Philoſophical Tranſactions*, and other places, it appears, that the *ſilk-worm* thrives, and works as well, in every reſpect in *England*, as in any other part of *Europe*.

The *ſilk-worm* is an inſect remarkable, both for the precious matter it furniſhes for divers ſtuffs, and alſo on account of the various forms it aſſumes, before as well as after its being invelop'd in the rich cod or ball it weaves itſelf. From a grain, or ſeed, (which is its firſt ſtate) it becomes a pretty large *worm*, of a whitiſh colour, inclining to a yellow. When a worm, it ſhuts itſelf up in its cod, and aſſumes the ſhape of a ſort of greeniſh bean, without any ſigns of life or motion. At length it awakes and becomes a butterfly, after making itſelf a paſſage out of its *ſilken* ſepulchre: and at laſt dying indeed, it prepares itſelf by a grain or ſeed it caſts, for a new life, which the warmth of the ſummer aſſiſts it in reſuming.

As ſoon as it is arrived at the ſize and ſtrength neceſſary for the beginning its cod, it makes its web; this is his firſt day's employment: on the ſecond he forms his cod, and covers himſelf almoſt over with *ſilk:* the third day he is quite hid; and the following days employs himſelf in thickening and ſtrengthening his cod; always working from one ſingle end, which he never breaks himſelf; and which is ſo fine, and ſo long, that thoſe who have nicely examin'd it affirm, that each cod contains *ſilk* enough to reach the length of ſix *Engliſh* miles. In ten days time the cod is in its perfection, and is now to be taken down from the branches of the mulberry-tree, where the worms have hung it. But this point requires a deal of care, for there are ſome *worms* more lazy than others; and 'tis very dangerous waiting 'till they make themſelves a paſſage, which uſually happens about the fifteenth day of the month.

The firſt, fineſt, and ſtrongeſt cods or balls, are kept for the grain; the reſt are carefully wound: or, if 'tis deſired to keep them all, or if there be more than can be well wound at once, they lay them for ſome time in an oven moderately hot, or elſe expoſe them for ſeveral days ſucceſſively, to the greateſt heats of the ſun, in order to kill the maggot; which, without this precaution, would not fail to open itſelf a way to go, and uſe thoſe new wings abroad it has acquired within. Ordinarily they only wind the more perfect cods. Thoſe that are double, or too weak, or too coarſe, are laid aſide; not as altogether uſeleſs, but being improper for winding, they are reſerv'd to be drawn out into skains. The cods are of different colours; the moſt common are yellow, orange-colour, Iſabella, and fleſh-colour.

There are ſome alſo of a ſea-green, others of a ſulphur colour, and others white; but there is no neceſſity of ſeparating the colours and ſhades, to wind them apart; as all the colours will be loſt in the ſcouring and preparing of the *ſilk*.

To wind the ſilk *from off the cods*, two machines are neceſſary; the one a furnace with its copper; the other a reel, or frame, to draw the *ſilk*. The winder, then ſeated near the furnace, throws into the copper of water over the furnace (firſt heated and boiled to a certain degree, which cuſtom can only teach) a handful or two of cods, which have been firſt well purged of all their looſe furry ſubſtance. He then ſtirs the whole very briskly about with birchen rods, bound and cut like bruſhes; and when the heat and agitation have detach'd the ends of the *ſilks* of the pods, which are apt to catch on the rods, he draws them forth, and joining ten or twelve, or even fourteen of them together, he forms them into threads, according to the bigneſs required to the works they are deſign'd for; eight ends ſufficing for ribbons; and velvets, *&c.* requiring not leſs than fourteen. The ends thus join'd into two or three threads, are firſt paſs'd into the holes of three iron rods in the fore-part of the reel; then upon the bobbins, or pullies, and at laſt are drawn out to the reel itſelf, and there faſtned, each to an end of an arm or branch of the reel. Thus diſpoſed, the workman giving motion to the reel, by turning the handle, guides his threads, ſubſtitutes new ones, when any of them break, or any of the cods are wound out; ſtrengthens them where neceſſary, by adding others; and takes away the cods wound out, or that, having been pierced, are full of water. In this manner two workmen will ſpin and reel three pounds weight of *ſilk* in a day, which is a greater diſpatch than is made by the ſpinning-wheel, or diſtaff. 'Tis true, all *ſilks* cannot be ſpun, and reel'd after this manner; either by reaſon the cods have been perforated by the *ſilk-worms* themſelves, or becauſe they are double, or too weak to bear the water; or becauſe they are coarſe, *&c.* of all theſe together, they make a particular ſort of *ſilk* called *Fleuret*: which being carded, or even ſpun on the diſtaff, or the wheel, in the condition it comes from the cod, makes a tolerable good *ſilk*.

As to the cods, after opening them with ſciſſars, and taking out the beans (which are of ſome uſe for the feeding of fowl) they are ſteeped three or four days in troughs, the water whereof is changed every day to prevent their ſtinking. When they are well ſoftened by this ſcouring, and clear'd of that gummy matter, the *worm* had lined the inſide withal, and which renders it impenetrable to the water, and even to air itſelf; they boil them half an hour in a lie of aſhes, very clear, and well-ſtrained; and after waſhing them out in the river, and drying them in the ſun, they card and ſpin them on the wheel, *&c.* and thus make another kind of *Fleuret*, ſomewhat inferior to the former. SPIDER-SILK, *ſee* SPIDER.

SILVER is a white metal, holding the ſecond place among metals; being of all others after *gold* the fineſt, pureſt, moſt ductile and moſt precious.

There are *ſilver* mines in all the four quarters of the world. *Europe* has its ſhare; nor is *Great-Britain* quite deſtitute of them, tho' it has not any of great value.

The mines of *Peru* and ſome other parts of *America* are much the richeſt and moſt abundant; they appear almoſt inexhauſtible: particularly thoſe of *Potoſi*, which continue to be dug with equal advantage, as when firſt diſcover'd; with this only difference, that the veins which were then almoſt in the ſurface of that mountain are now ſunk to prodigious depths; the workmen going to them by a painful deſcent of four or five hundred ſteps.

Many millions of *Indians* have periſh'd in them; and great numbers are ſtill deſtroy'd yearly.

The ores or mineral ſtones they dig are not all of the ſame quality, conſiſtence or colour; ſome are white or aſh-colour'd, ſpotted with red or blue, and call'd *Plata-blanca*.

Others are black, and call'd *Plomo-ronco*.

Theſe laſt are the richeſt and the eaſieſt wrought, no *mercury* being here requir'd; nor any thing, but to put them in the fire; where the *lead* evaporating, leaves the *ſilver* pure.

The *Indians* knowing nothing of the uſe of *mercury*, before the arrival of the *Spaniards*, melted none but this laſt kind of mineral.

There is another mineral, they call *roſſicler*, which is black, and is diſtinguiſh'd by whetting and rubbing it againſt *iron*, which turns it red.

This ore is very rich, and the metal it yields is of the beſt ſort.

That call'd *Loroche* burns like *talc*, and looks as if it were *ſilver'd*, but does not yield much.

The *Pacho* is of a yellow red, very ſoft, and found almoſt broke in pieces: this is not rich.

The *Cobritto* is green and half friable; tho' the *ſilver* be viſible, yet it is exceeding difficultly drawn from it, by reaſon of the *copper* wherewith it is intermixt.

In the laſt place, the *arannear*, which is only found in *Potoſi*, and that only in the mine of *Cotamito*, conſiſts of threads of pure *ſilver*, interwove like a *ſilver* galoon, that has been burnt to get out the ſilk.

The *ſilver veins*, of what quality ſoever, are uſually richer in the middle than towards the extremes; but the richeſt places are thoſe where the veins interſect.

It is accounted a great addition to the richneſs of a mine to be near a river, for the advantage of the mills to grind the ore. As for inſtance at *Lipes* and *Potoſi*, the *caxon* of ore muſt yield ten marks to defray expences; whereas at *Tanava* there needs not more than five.

The moſt uſual way of ſeparating the *ſilver* from the ore is by what they call *Pignes*; but however, ſometimes they uſe nothing but fire frequently repeated, or *aqua-fortis*.

That which renders the working of the mines exceedingly dangerous, is the exhalations ariſing from them, which are felt even on the outſide, and do affect alſo animals grazing on the outſide in their neighbourhood, but ſtupify the miners in the inſide; none of whom can bear ſo poiſonous an air a day together.

Sometimes it is ſo fatal, that it kills upon the ſpot; and obliges them to ſtop up the veins again, whence it exhales.

The mines of *Potoſi* are not ſo ſubject to them by far, and yet without the herb *Paraguay*, the infuſion of which is taken by the miners, as we do that of *tea*, thoſe mines muſt be ſoon abandon'd.

Tho' the mines of *Potoſi* and *Lipes* ſtill keep up their reputation, yet there have been ſeveral diſcover'd within this few years, which far exceed them in richneſs; as the mines of *Oruro* eighty leagues from *Arica*, thoſe of *Ollachea* near *Cuſco*, open'd in the year 1712.

It is remarkable that moſt of the mines in *America* are found in cold and barren places.

The method of ſeparating *ſilver* from the ore in *Europe* is the ſame as that of gold, that is, by means of *quickſilver*; with this difference, that for *ſilver* to every fifty hundred weight of ore is added one hundred weight of rock-ſalt, or ſome other natural ſalt. *See that curious operation under the article* GOLD.

To ſeparate the *ſilver* from the *mercury*, with which it is amalgamated; they have a furnace open at the top, and the opening cover'd with a kind of capital, made of earth of a cylindrical form; that may be clapt on or taken off at pleaſure.

The maſs of *ſilver* and *quickſilver* being laid in the furnace and the capital apply'd, and the fire lighted underneath, by this means the *quickſilver* rais'd by the action of the fire in form of vapours, is caught in the capital, and taken thence, to be us'd in the ſecond operation.

The ſtandard of fine *ſilver* is twelve penny weights, each conſiſting of twenty-four grains.

When 'tis below this, it muſt be rais'd to it by refining, which is uſually perform'd by means of *lead*.

In order to this, a coppel is fill'd with a mixture of brick-aſhes and aſhes of a bullock's and other bones.

'Tis ſet on the fire, and heated red-hot; in which ſtate the *ſilver* and *lead* are put in together, in the proportion of a pound of *lead* to eight ounces of *ſilver*, and even ſomewhat more *lead*, if the *ſilver* be very coarſe.

As theſe two metals melt together, the copper before mixt with the *ſilver* diſſipates into ſmoak or goes away with the ſcum; and ſo does the *lead* itſelf, leaving the *ſilver* alone in the *coppel* in its proper degrees of fineneſs.

In this method of refining, wherein ſix or ſeven thouſand pounds may be refin'd at once, the metal is drawn out of the coppel two ways; the one by plunging in it, while ſtill liquid, a thick bar of iron, round which, the *ſilver* ſticks in form of a ſhell or cruſt, repeating this again and again; the other is by letting the *coppel* ſtand till 'tis cold; in the bottom of which, the *ſilver* fixes in form of a cake.

Beſides the refining of *ſilver* with *lead*, there is another manner of doing it with *ſalt-petre*, the manner of which is deſcrib'd under the article REFINING.

But both the one and the other are tedious and troubleſome, when perform'd on large quantities.

This gave occaſion to M. *Homberg* to endeavour to ſhorten the operation; which he effected with good ſucceſs.

This method is as follows,

To calcine the *ſilver* with half its weight of common *ſulphur*, and after melting the whole together, to caſt a quantity of ſteel filings upon it at ſeveral times.

Upon this, the ſulphur quits the *ſilver*, and joins itſelf to the iron, and both are converted into *ſcoria*, which ſwims on the *ſilver*, and the metal itſelf is found pure at the bottom of the crucible.

The eſſay of *ſilver* is alſo made by the coppel, in the ſame manner, as the refining by *lead.*

If the *ſilver*, after this eſſay, preſerves its weight, 'tis ſtandard; if it loſes, the grains, or even penny-weights of its diminution are accounted.

SILVER WIRE is *ſilver* drawn thro' the holes of a wire-drawing iron, and by this means reduc'd to the fineneſs of a thread or hair. As for the manner of drawing it, *ſee under the article* GOLD WIRE.

SILVER LEAF is what the gold-beaters have reduc'd to fine thin leaves, to be us'd by *gilders*, &c. *See* GOLD LEAF.

SHELL SILVER is made of the ſhreads of *ſilver leaves* or the leaves themſelves; uſed in painting and ſilvering certain works: *ſhell ſilver* is prepar'd after the ſame manner as *ſhell gold.* See GOLD.

To lay on a ground to GILD *and* SILVER *upon.*

Steep two ounces of fine *bole-armoniac* (well choſen, freſh, and greaſy to the touch;) in water to diſſolve, and afterwards grind it, adding to it the quantity of a filberd of *crayon*, and of a pea of tallow, (which is enough for one grinding) which are to be prepar'd as follows:

Melt them and put them into freſh water, and work them well with your fingers;

And as you grind it, put a little ſoap-ſuds among the *bole.*

When this compound has been ground, put it into fair water, changing the water from time to time to preſerve it.

When this is to be uſed, it is to be tempered with warm ſize; and if it prove as ſtrong as what you whitened with, put in a third of water, and mix it with the *bole*, which muſt be made of the thickneſs of a cream; then lay it on the work with a pencil, and go over the whole with it three or four times; letting it lie to dry each time before you go over it again; and when it is finiſhed and dry, rub it with a ſoft cloth, before you proceed to lay on the *gold* or *ſilver*.

When this ground is us'd for *gold*, a little *red lead* muſt be added to it.

To MATT SILVER.

Grind white *ceruſs* with water, and then temper it with *Ichthyocolla* or fiſh-glue, or elſe glove-ſize very fine; the firſt is the moſt beautiful. It muſt be laid with a pencil on the places that you matt.

To

To SILVER COPPER *or* BRASS.

1. Cleanſe the metal with *aqua fortis*, by waſhing it lightly with it, and immediately throwing it into fair water, or by heating it red-hot, and ſcouring it with ſalt and tartar, and fair water with a ſmall wire bruſh.

2. Diſſolve ſome fine *ſilver* in *aqua fortis* in a broad bottom'd glaſs veſſel, or of glazed earth, then evaporate away the *aqua fortis* over a chafing-diſh of coals.

3. Put five or ſix times its quantity of water, or as much as will be neceſſary perfectly to diſſolve it, on the remaining dry *calx*; evaporate this water with the like heat: then put more freſh water, and evaporate again, and if need be, the third time; making the fire towards the latter end ſo ſtrong, as to leave the *calx* perfectly dry; which, if your *ſilver* be good, will be of a pure white.

4. Take of this *calx*, *common ſalt*, *cryſtal of tartar*, of each a like quantity or bulk, but not in weight; mix all well, then put the metal into fair water, and take of the aforeſaid powder with your wet fingers, and rub it well on, 'till you find every little cavity of the metal ſufficiently ſilver'd over.

5. If you would have it richly done, you muſt rub on more of the powder; and in the laſt place waſh the ſilvered metal in fair water, and rub it hard with a dry cloth.

This, tho' done without *quickſilver*, may laſt ſome years; and when the *ſilver* begins to wear off, may as eaſily be renew'd.

To counterfeit SILVER.

Take cryſtal *arſenick* eight ounces, *tartar* ſix ounces, *ſalt-petre* two ounces, *glaſs* one ounce and an half, and of *ſublimate* half an ounce; reduce them ſeparately into a fine powder, and mix them; then take three pound of *copper* in thin plates, and put them into a crucible (with the former ingredients, layer upon layer) to calcine, covering it, and luting it ſtrongly, ſet it in the furnace, and there let it ſtand for eight or ten hours; then take it out, and when it is cold, break the pot, and take out all the matter, and melt it with a violent fire, caſting it into a mould.

Then take purged braſs two pound, of the former metal one pound, melt them together, caſting in now and then ſome of the aforeſaid powder; after which, add as much of fine *ſilver*, melting them together, and you have what you deſired.

Laſtly, to make it as white as *ſilver*, boil it in *tartar*.

Another way to counterfeit SILVER.

Take of purified *tin* eight ounces, *quickſilver* half an ounce; and when it begins to riſe in the heat, caſt into it powder of *cantharides* with a lock of hair, that it may burn in it; and being melted, put into it the aforeſaid powder, then take it ſuddenly from the fire, and let it cool.

To whiten SILVER.

Silver veſſels, or inſtruments boil'd with *ſalt*, *alum*, and *tartar*, gives them that whiteneſs and clearneſs, which they would ſcarcely be brought to by bruſhing, pumice-ſtone, or putty: old ſullied pieces may be brought in a trice to the like fairneſs by warm *aqua fortis*.

To prepare the SILVER *dye*.

Allow half a pound of *alum* for every fifteen yards of ſtuff, and three quarters of *fœnugreek*, let them boil for half an hour, then add one pound of *pot-aſhes*, and half a pound of *Braſil*, in which boil the ſtuffs for a quarter of an hour.

Another. To dye a pair of ſtockings; take ſix *galls*, and an equal weight of *gum Arabick*, and the like weight of *alum*, with a ſmall quantity of brown *Braſil* wood; boil theſe in rain-water, then cool the ſtockings out of the liquor three times.

To dye Stuff a laſting SILVER *dye*.

Firſt tinge the ſtuffs of a light *grey* in the *woad*, then rinſe it clean, and dry it; but you muſt take notice, that the whiter the ſtuff is before it is dyed, the brighter will be the luſtre.

To black or deepen it; take an ounce and half of powdered *galls*, four ounces and a half of *vitriol*, and half an ounce of *ſal-armoniac*, two ounces of *madder*, and a quarter of an ounce of *ſalt-petre*; and prepare them as the aſh-colour above-mentioned.

But if you would have it incline more to the red, add two ounces of boil'd *Braſil*, two ounces of ſharp lye, a quarter of an ounce of calcin'd *alum*, and a drachm of calcin'd *tartar*, and it will appear very beautiful.

To ſoften SILVER.

Boil *ſalt-petre*, *tartar*, *ſalt*, *verdet*, all together, 'till the water is conſum'd; then put to it urine, and let it ſo conſume, and you will have an oil, which put into melted *ſilver*, and it will ſoften it.

Or *thus*; Put as many wedges, as you have melted one night, into a crucible, and ſet it into a furnace, but ſo as they may not melt, and they will be ſoft and fair.

Or thus; Take honey and oil, of each a like quantity, quench *ſilver* or *gold* in it three or four times, and it will be ſofter.

Or thus; Take *maſtich*, *frankincenſe*, *myrrh*, *borax*, of each alike in powder.

Or thus; Quench *ſilver* or *gold* in water of *ſal-armoniac*, and it will be ſoft.

To tinge Silver *of a Gold colour*.

Take fine *gold*, fine *ſilver*, good *braſs*, or *braſs* and *copper* calcin'd with *ſulphur vivum*, of each a like quantity, melt them down together, and it ſhall appear to be gold of eighteen caracts fine.

Another way to tinge Silver.

Take of *quickſilver* purg'd an ounce and a half, of leaf-gold half an ounce, mix them, and put them into a glaſs retort well luted, ſet it on the fire 'till it grow hot; then take it off, and add to it *quickſilver* purg'd one ounce, *ſal armoniack* half an ounce, *ſal ellebrot* a quarter of an ounce, *borax* one drachm, then ſeal up the glaſs hermetically, and ſet it into a continual fire for three days; then take it out, and let it cool, open the retort, take out the matter, and powder it very fine; of which powder mix one ounce with five ounces of *ſilver*, and it will tinge it into a good gold colour.

The way to make Sal Ellebrot.

Take pure *common ſalt*, *ſal gemma*, and *ſal alkali* in powder, of each half an ounce, juice of *mint* two ounces, ſpring-water two pounds, mingle them and evaporate.

Quickſilver alſo is purg'd by waſhing it in ſharp vinegar three or four times, and ſtraining it through a ſhammy leather, or by ſubliming it, which is better.

To bring Silver *into a Calx.*

This is done by making it into an amalgama with *quickſilver*, and then ſubliming it; or by diſſolving it in *aqua fortis*, and precipitating it with the ſolution of ſalts in fair water, and then waſhing it often with fair water to free it from the ſalts; or elſe by mingling the filings with ſublimed *mercury*, and afterwards cauſing the *mercury* to aſcend in a retort, which will leave at bottom the calx of *ſilver* fit for jewels, *&c.*

To blanch Silver.

Take *ſal armoniac*, *roch alum*, *alum plumoſum*, *ſal gem*, *argol*, *Roman vitriol*, of each a like quantity, powder them, mix them, and diſſolve them in fair water; in this boil the *ſilver* ſo long, 'till you find it of an excellent whiteneſs.

To colour Silver *of a Gold colour.*

Take *ſalt-petre* three pound, *roch-alum* ſeven pound and an half; mingle them, and diſtil them keeping the water for uſe.

When you uſe it, melt the *ſilver*, and quench it in the ſaid water.

To ſilver *any metal.*

Diſſolve fine *ſilver* in ſtrong *aqua fortis*, put to it ſo much *tartar* in fine powder, as will make it into a paſte, rub the metal with it, and it will look like fine *ſilver*.

SIN is repreſented [in *Painting*, &c.] by a youth blind, black and ſtark naked, ſeems to walk through crooked ways, and by precipices, girt round with a ſerpent gnawing his heart.

His youth denotes his imprudence and blindneſs, in committing *ſin*; his wandering ſhews his deviating from, and tranſgreſſing the law; black and naked ſhews, that *ſin* deprived men of grace, and the whiteneſs of virtue; the ſerpent is the devil continually ſeecking to delude with falſe appearances.

SINCERITY is repreſented [in *Painting*, &c.] by a young woman in a thin golden robe, ſhe holds a human heart in her left hand, in her right a white dove; both ſignify, that true *ſincerity* is incapable of hypocriſy, her integrity makes her fear nothing, ſhe makes her actions manifeſt by diſcloſing her heart to all people.

To make ISING-GLASS SIZE.

Take fine iſing-glaſs in ſmall bits one ounce, fair water a quart; let it ſtand for twelve hours only warm, and afterwards boil it, but very gently, and continue the ſimmering 'till it is all diſſolv'd; the water alſo being waſted away to a pint or leſs, let it cool and keep it for uſe.

It will be thick like a gelly, but will not keep above three or four days, ſo that you ought to make no more at once, than preſent occaſion requires

To make GOLD SIZE.

Take *gum animi*, *aſphaltum*, of each one ounce, *minium*, *litharge of gold*, and *umber*, of each half an ounce, reduce all into a very fine powder, and add to them of *linſeed-oil* four ounces, of drying oil eight ounces; digeſt over a gentle fire, that does not flame, ſo as it may only ſimmer and bubble up, but not boil (for fear it ſhould run over and ſet the houſe on fire) keep it conſtantly ſtirring with a ſtick, 'till all the ingredients are diſſolv'd and incorporated, and don't leave off ſtirring it, 'till it becomes thick and ropy, and is boil'd enough; let it ſtand 'till it is almoſt cold, and then ſtrain it through a coarſe linnen-cloth, and keep it for uſe.

To prepare it for working.

Put according to the quantity you ſhall uſe in a horſe-muſcle ſhell, and ſo much *oil* of *turpentine* to it, as ſhall diſſolve it, making it as thin as the bottom of your *ſeed-lac varniſh*, hold it over a candle to melt, and then ſtrain it through a linnen rag, into another ſhell; add to theſe ſo much *vermilion* as will make it of a darkiſh red.

If now it is too thick for drawing, you muſt thin it with *oil of turpentine*. The chief uſe of this ſize is for laying on of metals.

The beſt Gold Size *for burniſhing.*

Take fine *bole* what quantity you pleaſe, grind it finely on a marble, then ſcrape into it a little fine beef-ſuet, grind all well together; after which mix a ſmall proportion of parchment *ſize*, with a double proportion of water, and it is done.

To make Silver Size.

Grind fine *tobacco-pipe clay* fine, (and if you will, you may add a little *lamp-black* to turn it of a light aſh-colour) ſcrape into it a little *deer's ſuet*, and grind them all extremely fine; then add a mixture of *ſize* and water, as before directed.

Another Silver Size.

Take *tobacco-pipe clay* in fine powder, ſcrape ſome black lead, and a little *Genoa ſoap*; and grind them all together with *parchment-ſize*, as above directed.

A Size *for either Silver or Gold.*

Take fine *bole* in fine powder one pound, *black lead* two ounces, grind them together; then add of *oil olive* two ſcruples, and *bees-wax* one ſcruple, melted together; grind all theſe very finely in a maſs; and in the laſt place, grind them together with *parchment-ſize* and water

But remember never to grind more *gold* and *ſilver ſize* at a time than will ſerve the preſent occaſion.

To make Parchment-Size.

Boil cuttings of clean parchment one pound in two quarts of fair water to a gelly; ſtrain it hot, then let it cool, and it will be a ſtrong *ſize*.

This may be us'd, as well as for the former uſes, in white *japan* work inſtead of *iſing-glaſs ſize*.

The way of uſing this Size.

Melt ſome of it over a gentle fire, and ſcrape into it as much whiting, as may only colour it: mix and incorporate them well together with a clean pencil; with this you may whiten frames, rubbing it well in with your bruſh, that it may enter into every hollow place of the carv'd work, *&c.* letting it dry on.

Then melt the *ſize* again, and put in more whiting, ſo as to make it ſomewhat thick, and whiten the frames over again ſeven or eight times, letting it be thoroughly dry between each time; but after the laſt going over, before it is quite dry, you muſt dip a clean bruſh pencil in fair water, to wet and ſmooth it over; and when it is thoroughly dry, bruſh it over, as the neceſſity of the work ſhall require.

After this, with a googe or chiſſel, not half a quarter of an inch broad, open the veins of the carv'd work, which the *whiting* has choak'd up; then ſmooth and water plane it all over with a fine rag wetted, and your finger; let it be dry, and then it is fit to receive the former *gold Size*.

To make Gold Size *in oil.*

Take *yellow oker* in fine powder, what quantity you pleaſe, mix it with an indifferent fat *linſeed-oil* a ſufficient quantity, grind them well together, and put the maſs into a gallipot, upon which put ſome fat oil, to keep it from ſkinning over; cover it cloſe with a piece of bladder or paper, and keep it for uſe.

It will keep good for ten or twelve years, and be the better, and not the worſe.

If you would have your work extraordinary well done, prime it over thinly twice, and let it ſtand to dry for four or five days.

As to Iſing-glaſs Size, *you are to uſe the following caution.*

When you lay blues, whites, or any other colours with it, let it not be too ſtrong, but rather weak, and ſufficient to bind the colours, and make them ſtick on the work; for if it is too ſtrong, it will be apt to crack or fly off.

But when you lay or waſh with clear iſing-glaſs to keep your varniſh from ſoaking in, or tarniſhing your colours, then it muſt be ſtrong, and of a full body.

To make GLOVE-LEATHER SIZE.

Take half a pound of the cuttings of white gloves, and put them in water, letting them ſteep for ſome time; then boil them in a pot with ſix quarts of water, 'till it be conſumed to one; then ſtrain it through a cloth in a new earthen pan.

To try whether the *ſize* is ſtrong enough, when it has ſtood 'till it is cold, feel it with your fingers, and if it feels firm under your hand, it is done.

To colour SKINS *a light* BLUE *or* TURKY *colour.*

Take *ſmalt* four ounces, *red wine* half a pint, and *alum* four ounces, *vinegar* a pint, and *white ſtarch* an ounce; ſet them over a gentle fire, but do not ſuffer them to be over thick; ſoak the *skins* in *alum* water, and hang them up to dry; add to this colouring a pint of gum water, tolerably thick, lay it on when dry, glaze it over, and poliſh it.

To dye SKINS *a* CRIMSON *colour*, &c.

Take hard ſoap, ſcrape three ounces, and diſſolve it in fair water, and add to it three ounces of *alum*; boil them over a gentle fire, 'till the water grow clammy, or a little inclining to thickiſh; then put in a few grains of *cochineal*, half an ounce of *lake*, two ounces of *red lead*, and a quarter of an ounce of *vermilion*, and a ſmall piece of *indigo*; mix them well by ſtirring them together, and keep them upon a gentle fire, 'till they are about the thickneſs of the white of an egg; then having firſt rubb'd the *skin* over with *alum* water, and hung it up to dry, apply this colour, as is directed for others.

Another fair RED *for* SKINS.

Firſt wet the *skins* or *pelts* in *alum* water, in which a like quantity of *ſalt*, with half as much *lime*, has been diſſolv'd; then ſtretch them, and dry them, take a quart of the laſt brewer's drink, and put into it an ounce of *Braſil* powder or raſpings, a quarter of an ounce of *vermilion*, and an ounce of *alum* powder; thicken them over a gentle fire by continual ſtirring, and ſo with a bruſh or cloth rub over the *ſkins* evenly, not laying it thicker in one place than another, and this do three times ſucceſſively, ſuffering them only to dry the mean while; and being thus done, they will be according to your expectation.

To colour SKINS GREEN.

Take the leaves of nightſhade, bruiſe them in a mortar, ſtrain out the juice, and diſſolve in each pint two ounces of *alum*, to which add half an ounce of *verdigreaſe*, and heat them gently over the fire; then let it ſtand for twenty-four hours, and ſtrike over the *ſkins* with a bruſh with it warm; let them dry and go over them again, 'till they have taken a lively colour.

To colour SKINS *a light* GREEN.

Take the herb call'd *horſe-tail*, bruiſe it, and add to the juice a ſmall quantity of *verdigreaſe*, *alum*, and *copperas*, make it into a colour over a gentle fire, and it will prove a very pleaſant colour.

A liquor for GILDING SKINS, METALS, *or* GLASS.

Boil two pounds of *linſeed oil* in a well-glaz'd veſſel, 'till it will burn a feather being put into it; then put into it *pitch*, *roſin*, dry *varniſh*, or *ſandarach*, of each ſomething better than five ounces, of *aloes hepatica* two ounces and three quarters; let them be powdered and put into the oil, encreaſing the fire by degrees, and keeping ſtirring them with a ſtick.

If the liquor is too clear or bright, you may add an ounce or two more of *aloes ſuccotrina*, and diminiſh the varniſh, and ſo the liquor will be darker and be more like gold.

Having boiled it enough, ſtrain it, and keep it in a glaſs for uſe, and uſe it with a pencil bruſh.

SLEEP (is call'd the brother of death) was painted of a moſt ſour, lowring, and melancholy aſpect, aged, and holding in her right hand a young child very beautiful, and in her left another child, of a moſt ſwarthy, black, and dull complexion, with legs and arms very crooked.

Philoſtratus in a tablet he made for *Amphiarus*, repreſents her as an aged woman, ſlothful and ſluggiſh, clothed with ſeveral garments, the undermoſt of which is black, and the upper one white, holding in one of her hands a horn pouring forth ſeeds.

By the garment is ſignified night and day; by the ſeed, reſt, eaſe, and quiet.

GASPARS SMITZ, *alias* MAGDALEN SMITH, was a *Dutch* painter, who came over to *England* about fifty years ago. He practiſed ſome time in *London*, but upon the encouragement of a lady of quality, he went over to *Ireland*, where he gained the greateſt eſteem, and had very large prices for his work; he painted portraits in oil of a ſmall ſize; but his inclination led him moſt to *Magdalens*, from whence he had his name.

Theſe *Magdalens* were very gracefully diſpoſed, beautifully coloured, expreſſing the character of grief and penitence. He had alſo a particular talent for painting fruit and flowers, inſomuch that one bunch of grapes of his performance was ſold in *Ireland* for forty pounds. He ſeldom failed to introduce a thiſtle into the fore-ground of his *Magdalens*, which he painted after nature with wonderful neatneſs; he died in *Dublin* about forty years ago.

SMOKE [*in painting in miniature*] is imitated with *black indigo* and *white*, and ſometimes with *biſtre*.

You may alſo add *vermilion* or *oaker*, according to what colour you would have it.

The SNOW-DROP. Cover and finiſh as for the *lilly*, do the ſeed with *maſticote*, and ſhade with *gall-ſtone*; let the green be *verditer* and *iris*.

Dying of SNUFF *colours.*

1. *To dye a* Snuff *colour.*

Take water a ſufficient quantity, *nut-galls* in powder one pound, *madder* four ounces and a half, *red wood* ground one pound, *fuſtick* four ounces; make them boil, and enter twenty yards of broad cloth, handle it, and boil two hours, and cool; add *copperas* four ounces, enter your cloth, and handle it, and boil it a quarter of an hour, and cool it; if you would have it ſadder, uſe the more *copperas*.

2 *Another* Snuff *colour.*

Take clear ſtale bran-liquor *q. ſ. alum* three pounds, enter twenty yards of broad cloth, boil three hours, cool and waſh it. Take fair water *q. ſ. nedder* or *ſtrawel* a ſufficient quantity, boil well, cool with a little water, enter your cloth, and make a bright yellow, cool and waſh again; take freſh bran-liquor *q. ſ. madder* four pound, *galls* eight ounces, enter your cloth at a good heat, handle it to a boiling, cool and waſh it. *Note q. ſ. ſignifies a ſufficient quantity.*

3. *An obſervation.*

In making a light *ſnuff* colour, you muſt put in the leſs *copperas*; if you would have it to look greeniſh, you muſt uſe the more *fuſtick*; but if you would have it look more red, uſe the more *red wood*.

4. *Another* Snuff *colour.*

Take water *q. ſ. logwood* one pound, *fuſtich* and *ſumach* of each two ounces; mix and make the lead boil ſtrongly, enter your cloth, and boil a quarter of an hour, and ſo cool; add *copperas* eight ounces, and ſo ſadden as you ſee occaſion.

5. *Another* Snuff *colour.*

Take water *q. ſ. red-wood* ground two pounds, *Braſil* ground one pound, *ſumach* one pound, *nut-galls* bruiſed ſmall two ounces;

boil, enter your cloth, boil two hours, then add *copperas* a pound and half; enter your cloth, and ſadden as you think fit.

6. *Another* Snuff *colour*.

Take water *q. ſ. fuſtick* two pounds, *madder* one pound, *red-wood* ground half a pound, let them boil, and then enter twenty yards of broad cloth, handle it and let it boil two hours, and cool it; add *copperas* four ounces, which is enough for the lighter colour; then enter your cloth, handle it, boil half an hour, and then take it out and cool it.

FRANCIS SNYDERS born in 1579, ſcholar of *Henry van Balen*, liv'd at *Antwerp* and in *Italy*, excell'd in painting wild beaſts, hunting, fiſh, fruit.

SOAP is a ſort of paſte ſometimes hard and dry, and ſometimes ſoft and liquid, much us'd in waſhing and whitening linens; and alſo by dyers, fullers, and many other workmen.

The principal *ſoaps* of our *Engliſh* manufacture are the *ſoft*, the *hard*, and the *ball ſoap*; the *ſoft ſoap* again is either *green* or *white*, the proceſs of making each kind is as follows;

1. The *green ſoft ſoap*; the principal ingredients us'd in making *green ſoap*, are lyes drawn from pot-aſhes, and lime boil'd up with tallow and oil.

Firſt the lye and tallow are put into the copper together, and when melted, the oil is put to them, and the copper made to boil; then they damp or ſtop up the fire, while the ingredients remain in the copper to knit or incorporate; which being done, they ſet the copper a boiling again, feeding or filling it with lyes as it boils, 'till they have put in a ſufficient quantity; after which they boil it off with all convenient ſpeed, and put it into barrels.

2. *White ſoap*; of this one ſort is made after the manner that *green ſoap* is; excepting that they do not uſe any oil in this.

Another ſort of *white ſoft ſoap* is made from lyes of aſhes of lime, boil'd up at twice with tallow.

Firſt they put a quantity of lyes and tallow into the copper together, which is kept boiling, being fed with lyes as it boils, 'till it is boiled enough, or that they find it grains; then they ſeparate or diſcharge the lyes from the tallowiſh part, which they put into a tub, throwing away the lye, this they call the *firſt half-boil*.

Then they charge the copper again with freſh tallow and lye, and put the firſt *half-boil* out of the tub into the copper a ſecond time, and keep it boiling with freſh lye and tallow, 'till it is brought to perfection, and afterwards filled out into ſoap-caſks.

3. *Hard ſoap* is made of aſhes and tallow, and commonly boil'd at twice; the firſt boiling they alſo call a *half-boiling*, which is perform'd exactly after the ſame manner as the firſt *half-boil* of the *ſoft white ſoap*.

Then they charge the copper again with freſh lye, and put into it the firſt *half-boil* again, feeding it with lye, as it boils, 'till it is boil'd enough, or 'till it grains; then they diſcharge the lye from it, and put the *ſoap* into a frame to boil and harden.

Ball-ſoap is made alſo of lye from aſhes and tallow; they put the lye into the copper, and boil it 'till the watery part is quite gone, and there is nothing left in the copper but a ſort of nitrous matter (which is the very ſtrength and eſſence of the lye) then they put tallow to it, and keep the copper boiling and ſtirring for half an hour or more, in which time the ſoap is compleated, which they put into tubs or baskets with ſheets in them, and immediately (while ſoft) make it into balls.

It takes up near twenty-four hours to boil away the watery part of the lye.

SODA, which comes from *Egypt* and *Spain*, derives its name from the abundance of ſalt it contains; it is made of the ſame herb as the *polverine* and *rochetta* of the *Levant*, and is of the ſame ſort and nature with that; and tho' this herb grows in great quantities in many places, and comes naturally among water, and commonly flouriſhes near lakes, yet it is planted on the banks of the *Mediterranean* in *France*, *Spain*, and in *Egypt*, where by reaſon of the heat of the climate it grows in great quantities, but it has the moſt ſharpneſs and is ſtrongeſt in *Egypt*, where there is never any rain.

It is green all the winter, but they commonly cut it in the middle of the ſummer, when it is in its full vigour; after it has been dry'd by the heat of the ſun, they gather it on heaps, and burn it on hurdles or grates made of iron; the aſhes falling through into a pit, made underneath on purpoſe, there they grow into a hard maſs or ſtone, and are gathered and laid up for uſe, and are call'd *ſoda*, and their ſalt ALKALI, and are us'd for making glaſs and cryſtal. *See* ROCHETTA, POLVERINE, *and* CRYSTAL.

SOFTENING [in *Painting*,] is the mixing and diluting of colours with the bruſh or pencil.

Painters often uſe the term, *ſoften* deſigns in black and white made with the pen, *&c.* to weaken the teint. To *ſoften* a pourtrait, according to *Felibien*, is to change ſome of the ſtrokes, and give it a greater degree of ſweetneſs and ſoftneſs to the air thereof; which before had ſomething rough and harſh in it.

SOLDER } is a metallic or mineral compoſition, uſed in ſol-
SODDER } dering or joining other metals.

Solders are made of *gold*, *ſilver*, *copper*, *tin*, *glaſs of tin*, and *lead*; always obſerving, that in the compoſitions, there be ſome of the metal that is to be *ſolder'd*, mix'd with ſome finer and higher metals.

Goldſmiths make four kinds of *ſolder*, viz. *ſolder* of eight; where to ſeven parts of *ſilver*, there is one of *braſs* or *copper*. *Solder* of ſix, where only a ſixth part is *copper*; *ſolder* of four, and *ſolder* of three. It is the mixture of *copper* in *ſolder* that makes rais'd plate always come cheaper than flat.

The *ſolder* us'd by *plumbers* is made of two pounds of *lead* to one of *tin*. Its goodneſs is try'd by melting it, and pouring the bigneſs of a crown-piece upon a table; for if good, there will ariſe little bright ſhining ſtars in it.

The *ſolder* for *copper* is made like that of the *plumbers*, only with *copper* and *tin*; for very nice works, inſtead of *tin*, they ſometimes uſe a quantity of *ſilver*.

Solder for *tin* is made of two thirds of *tin*, and one of *lead*; but where the work is any thing delicate, as in organ-pipes, where the juncture is ſcarce diſcernable, 'tis made of one part of *tin of glaſs*, and three parts of *pewter*.

To ſolder *upon ſilver*, *braſs*, *or iron*.

Take *ſilver* five penny weight, *braſs* four penny weight, melt them together for ſoft *ſolder*, which runs ſooneſt.

Take *ſilver* five penny weight, *copper* three penny weight, melt them together for hard *ſolder*.

Beat the *ſolder* thin, and lay it over the place to be *ſoldered*, which muſt be firſt fitted and bound together with wire, as occaſion requires; then take *borax* in powder, and temper it like pap, and lay it upon the *ſolder*, letting it dry; then cover it with quick coals and blow, and it will run immediately; take it preſently out of the fire, and it is done.

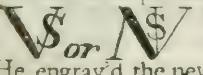
Note 1. That if a thing is to be ſolder'd in two places (which cannot be well done at one time) you muſt firſt *ſolder* with the *hard ſolder*, and then with the ſoft; for if it be firſt done with the ſoft, it will *unſolder* again before the other is *ſoldered*.

2. That if you would not have your *ſolder* run about the piece that is to be *ſoldered*, rub thoſe places over with *chalk*.

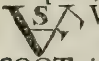
SOLDERING is the joining or faſtening together of two pieces of the ſame metal, or of two different metals, by melting and applying ſome metallic compoſition on the extremities of the metals to be join'd.

In the *ſoldering* either of *gold*, *ſilver*, *copper*, and all the metals before-mentioned, there is generally us'd *borax* in powder, and ſometimes *roſin*.

As to *iron*, it is ſufficient that it be heated red-hot, and the two extremities thus hammer'd together: and by this means they become incorporated together.



VIRGILIO SOLE engrav'd a great many pieces in copper and wood in *Hisbin*'s taſte. He engrav'd the new and old teſtament in 200 plates, the metamortamorphoſis of *Ovid* in 170 ſmall plates, hunting-pieces in great and ſmall, *&c.* He ſometimes made the letter V on one ſide of the plate, and S on the other.



VIRGILIO SOLE of *Bruſſels*, his mark under a dead *Chriſt*, engraven on a large plate in 1542.

SOOT is an earthy, volatile matter, ariſing from wood, coals and other fuel, along with the ſmoak, by the action of fire; or it is rather the ſmoak itſelf, fix'd and gather'd on the ſides of the chimney.

Dyers make conſiderable uſe of *ſoot*, for a kind of dun colour, which 'tis true has no agreeable ſmell; but then to anſwer to that, has the property of ſaving cloths and other ſtuffs from moths.

The *ſoot* found in the furnaces of glaſs-houſes is uſed by painters.

Soot of frankincenſe is the ſmalleſt and fineſt part of the *Incenſe*, call'd *Olibanum* or *male Incenſe;* burnt after the manner of *roſin* to make lamp-black.

SORROW
SADNESS
GRIEF
DEJECTION
} is an unpleaſant faintneſs, by which the ſoul receives the inconveniences of the evil, or of the defect repreſented to it by the impreſſions of the brain.

This paſſion is repreſented [in *Drawing*, *Painting*, &c.] by motions which ſeem to indicate the inquietude of the brain, and the dejection of the heart; the eye-brows being more rais'd in the middle of the forehead than next the temples.

They who are troubled with this paſſion have their eye-balls dull, the white of their eye inclining to yellow, the eye-lids hanging down, and ſomething ſwell'd; black and livid round the eyes, the noſtrils drawing downwards, the mouth open and the corners thereof drawn down; the head appears careleſly hanging on one of the ſhoulders, the complexion of a kind of lead colour, and the lips pale and wan. *See the Plate.*

Sorrow produces a dejection of the heart, by which all the parts of the face are caſt down.

SOUTH is repreſented [in *Painting*, &c.] by a black-moor boy, a ſun upon his head, ſurrounding him with its rays; upon his girdle are the ſigns *Taurus*, *Virgo* and *Capricornus*; arrows in his right hand, in his left a branch of the *lotus*.

The *zone* wherewith he is girded denotes the meridional ſigns; the arrows, the ſun's penetrating into the very bowels of the earth; the *lotus* at the ſun beginning to appear, appears out of the water, and according as the ſun aſcends, ſo does it; at noon it ſtands upright, and ſo in the afternoon it follows the ſun, 'till it enters into the water again.

SPECTACLES, an optic machine, conſiſting of two *lens's* ſet in horn, or other matter, and applied on the noſe, to aſſiſt in defects of the organs of ſight. *See* LENS.

Old people and all Presbytæ uſe *ſpectacles* of convex *Lens's*, to make amends for the flatneſs of the Eye, which does not make the rays converge enough to have them meet in the retina.

Short ſighted people, or myopes, uſe concave lens's, to hinder the rays from converging ſo faſt, through the great roundneſs of the eye, as to make them meet e'er they reach the retina.

In *Spain*, and at *Venice* eſpecially, ſpectacles are uſed in a different view: all the people of note and faſhion there, have them continually on their noſes; a folly, that has its ſource from the natural pride of thoſe people, who value themſelves on a profound wiſdom, and affect to ſtare very near at every thing; as if their eyes were weaken'd and worn out with exceſſive attention. *Vign. de Marv.*

F. Cherubin, a capuchin, deſcribes a kind of *ſpectacle-teleſcopes*, for viewing of remote objects with both eyes, hence term'd *Binoculi.* Though *F. Rheita* had mention'd the ſame before him, in his *Oculus Enoch* and *Eliæ.*

The ſame author invented a kind of *ſpectacles*, with three or four glaſſes, which perform'd extraordinarily.

Spectacles were certainly unknown to the ancients; yet they are not of ſo late a date as the *teleſcope*. *Franciſco Redi*, in a very learned treatiſe on *ſpectacles*, will have them to have been invented in the 13th century, between the years 1280 and 1311.

SPELTER or *Zink*, a ſort of imperfect metal, which ſome confound with *biſmuth*, and others with *ſpalt*; others again make it a female antimony. *See* ZINK.

Spelter is a kind of mineral lead, very hard, white, and brilliant; which tho' not perfectly malleable, yet ſtretches a little under the hammer.

'Tis found in greateſt quantity in the mines of *Goſſelar* in *Saxony*; and is uſually ſold in large, ſquare, thick cakes, whence one would judge it to have been melted, as it came out of the mines, and caſt into that form.

'Tis uſed to clear and whiten tin, in making of pewter, much as lead is uſed to purify gold and ſilver.

Thoſe, who imagine that the *ſpelter* is put in to increaſe the weight, are much miſtaken; ſince in the melting five or ſix hundred weight of tin, they ſcarce put in a pound of *ſpelter*, and that mix'd with turmeric. 'Tis alſo uſed in the making of ſolder, and with curcuma, in the melting of copper, to give that metal a good colour, which however is not permanent. (*See*

SOLDER.) The beſt is white, in fine ſcales, difficult to break, *&c.*

S.P.F. ſignifies *Stephen du Perach fecit.*

SPIDER-SILK. In the year 1710, Mr. *Bon* publiſh'd a diſſertation in *France*, concerning the procuring and preparing ſilk of the webs of *ſpiders*, and uſing it in ſeveral manufactures, which is to the following effect:

The *ſilk-ſpiders* make a ſilk every whit as beautiful, ſtrong, and ſhining, as that made by the ſilk-worm; it ſpins it out of the *anus*, around which are five *papillæ* or ſmall nipples; and behind theſe two others, all muſculous, and furniſh'd with ſphincters.

Theſe nipples ſerve as ſo many wire-drawing irons, in forming and moulding a liquor, which when dry'd in the air, after it has been drawn through them, is to be the ſilk.

Mr. *Reaumer* obſerves, that each of theſe nipples conſiſts of a number of leſſer and inſenſible ones, which a perſon may be convinced of, by preſſing a *ſpider's* belly between his fingers, to force the liquor to flow into the nipples; for by this means applying the finger againſt the *anus*, ſeveral diſtinct threads will be drawn out through the ſeveral perforations of the nipples.

The threads indeed are too fine to be told with any certainty; but Mr. *Reaumer* ſuppoſes, that each larger nipple may ſend forth ſix or ſeven; hence it is, we find how the *ſpiders* make threads bigger or ſmaller: for as before they begin to ſpin, they always apply either more or fewer of theſe ſix nipples againſt the body, whence the web is begun; or as they apply each or more or leſs ſtrongly, ſo as more or fewer of the inſenſible nipples come to take; the thread thus ſpun will be a compound of more or fewer of the ſingle threads.

Indeed as the threads come from the *anus* all join'd together, they appear to be ſingle, and Mr. *Bon* has diſtinguiſhed one of the ſingle ones to conſiſt of fifteen or twenty diſtinct threads.

The threads are of two kinds; the firſt is weak, and only ſerves for that kind of web, wherewith they catch flies. The ſecond is much ſtronger, and ſerves for wrapping up their eggs in; which by means of it are not only ſheltered from the cold, but defended from inſects, which might otherwiſe gnaw and ſpoil them.

Theſe threads they wind very looſely about the eggs, and bear a reſemblance to the cods and bags of ſilk-worms, that have been prepared and looſened from the diſtaff.

Theſe *ſpiders-bags*, when freſh and new, are of a grey colour; but having been long expos'd to the air, turn blackiſh. There might indeed be found other *ſpiders-bags*, of other colours, and which would afford a better ſilk; but their ſcarcity would render the experiment very difficult.

There are indeed *ſpiders* of ſeveral colours, as *black*, *brown*, *yellow*, *white*, &c. and they are again diſtinguiſh'd as to the number of their eyes, ſome having ſix, others eight, others ten. But as to the *ſilk-ſpider* itſelf, they are by Mr. *Bon* all reduc'd to two kinds; thoſe which have long legs, and thoſe that have ſhort; of which the ſhort-legged are the moſt common, and thoſe that furniſh the *raw-ſilk*.

Theſe always find out ſome place ſecure from the wind and rain, in which to make their bags; as hollow trees, the corner of windows or vaults, or under the eaves of houſes.

By collecting a quantity of theſe bags, a new ſilk may be made, in nothing, he tells us, inferior to the common ſilk. It will take all kinds of dyes, and may be wrought into any kinds of ſtuffs.

Mr. *Bon* had ſtockings and gloves made of it, which he preſented to the Academy, and others of the Royal Society.

The manner of preparing the bags to get this Silk, *is as follows:*

Mr. *Bon*, after he had gathered twelve or thirteen ounces of theſe bags, had them well beaten for ſome time with the hand and a ſtick, to get out all the duſt: he after this waſh'd them in luke-warm water, 'till they being taken out of the water, left it very clean; after this, they were laid to ſteep in a large veſſel with *ſoap*, *ſalt-petre*, and *gum Arabick*.

This with the bags in it was ſet over a gentle fire, and gently boiled for three hours; then taken out, and waſh'd in warm water to get out the ſoap, and afterwards laid by, to dry for ſome days, to fit them for carding, which was done by the common *carders of ſilk*, but with cards much finer than ordinary.

By this management he procur'd a ſilk of a very particular aſh-colour, which was very eaſily ſpun, and the thread ſpun from it, both ſtronger and finer than that of common ſilk; by which 'tis evident, that all manner of work may be made of it; nor is there any reaſon to fear, but that it will ſtand any trials of the loom, after having undergone, or paſs'd through that of the *ſtocking-weavers*.

The only difficulty is in procuring a quantity of *ſpiders* bags, in order to carry on a conſiderable manufacture in it.

But this, Mr. *Bon* ſays, would be no difficulty at all, if we had but the art of breeding them as they do ſilk-worms; for they multiply much more, every *ſpider* laying ſix or ſeven hundred eggs, whereas the *ſilk-worm* does not lay above an hundred: and yet theſe laſt are ſo tender, *&c.* that one half die without making any bags, or are hindred by ſome accident or other from making bags; whereas the *ſpiders* hatch of themſelves, without any care, in the months of *Auguſt* and *September*, in fifteen or ſixteen days after they are laid; the old *ſpiders* that lay them dying ſoon after.

The young ones thus bred, live ten or twelve months without eating, and continue in the bags without growing, 'till the hot weather putting their viſcid juices in motion, forces them to come forth, ſpin, and run about to ſeek for food.

Were there therefore a way found for breeding young *ſpiders* in rooms, they would without doubt furniſh a much greater quantity of bags than *ſilk-worms* do.

For of ſeven or eight hundred young *ſpiders*, which Mr. *Bon* kept, ſcarce one died in a year; whereas of one hundred *ſilk-worms*, not forty liv'd to make their bags.

Mr. *Bon* having order'd all the ſhort-legg'd *ſpiders*, that could be found in the months of *Auguſt* and *September*, to be brought to him, he ſhut them up in paper coffins and pots, covering the pots with papers, which he prick'd full of pin-holes, as well as the coffins, to give them air. He fed them with flies, and found ſome time after, that the greateſt part of them had made their bags.

He alſo found that *ſpiders bags*, in reſpect to their weight, afforded much more ſilk than thoſe of the ſilk-worms.

As a proof of this, he ſays, that thirteen ounces yield near four ounces of clear ſilk, two ounces of which will make a pair of ſtockings; whereas ſtockings of common ſilk weigh ſeven or eight ounces: nor is there any venom in the ſilk, nor even in the *ſpider*, as ſome have imagined.

Mr. *Reaumer*, being appointed by the Royal Academy to make a further examination into this new *ſilk-work*, rais'd ſeveral objections, and ſtarted ſeveral difficulties againſt it, which are to the purpoſe following:

1. That the natural fierceneſs of *ſpiders* renders them unfit to be bred and kept together; four or five thouſand being diſtributed into cells, fifty in ſome, one hundred or two hundred into others, the big ones kill'd and eat the leſs, ſo that in a ſhort time there were ſcarce one or two left in a cell: and Mr. *Reaumer* aſcribes the ſcarcity of *ſpiders* to this inclination of eating one another, conſidering the vaſt number of eggs they lay.

He alſo affirms, that the *ſpiders bag* is inferior to that of the ſilk-worm, both as to luſtre and ſtrength, and that it produces leſs matter to be manufactured.

That the thread of the *ſpiders* web will bear no more than the weight of two grains without breaking; that of the bag will bear thirty-ſix. Therefore the latter in all probability is eighteen times thicker than the former; yet it is weaker than that of the ſilk-worm, which will bear a weight of two drachms and a half.

So that five threads of the *ſpider's bag* muſt be put together, to equal one thread of the ſilk-worm's bag.

And beſides, he adds, that it is impoſſible theſe ſhould be apply'd ſo juſtly over one another, as not to leave little vacant ſpaces between them, whence the light will not be reflected; and conſequently a thread thus compounded, muſt fall ſhort of the luſtre of a ſolid thread.

And to this he adds, that the *ſpider's* thread cannot be wound off, as that of the ſilk-worm may, but muſt of neceſſity be carded; by which means being torn in pieces, its evenneſs, which contributes much to its luſtre, will be deſtroyed.

Again he obſerves, that *ſpiders* furniſh much leſs ſilk than *ſilk-worms.* The largeſt bags of the latter weigh four grains; the ſmaller three grains, ſo that 2304 worms do produce a pound of ſilk.

The *ſpiders bags* do not weigh above one grain; yet when clear'd of their duſt and filth, loſe two thirds of their weight. Therefore the work of twelve *ſpiders* does but equal that of one ſilk-worm.

And beſides, as the bags are the works of the females only, who ſpin them to depoſite their eggs in, there muſt be kept 55,296 *ſpiders* to yield a pound of ſilk. Yet this will only hold of the beſt *ſpiders*; thoſe large ones, commonly ſeen in gardens, *&c.* ſcarce yielding a twelfth part of the ſilk of the others: he ſhews, that 280 of theſe would not do more than one ſilk-worm, and 663,552 of them would ſcarce yield a pound of ſilk.

To take out SPOTS.

Waſh them with oil of *tartar per deliquium*, two or three times, and they will vaniſh, then waſh with ſoap-ſuds, and laſtly with fair warm water.

To take out Spots *of greaſe.*

Rub them very well two or three times with oil of *turpentine*, and they will vaniſh away inconceivably; and then waſh again with rectified ſpirits of wine.

To take out Spots *of oil or greaſe out of white or red* Silk.

Rub the ſpots well with *aqua-fortis*, and afterwards rub them again with the glair of new-laid eggs; hang it in the ſun to dry, and afterwards waſh it with fair water, and preſs it well

To take out Spots *of* Pitch, *&c.*

Firſt rub them well with hogs lard, or old [illegible] peat this two or three times; then ſoap them [illegible] with fair water.

Spirit of wine is alſo good in this caſe.

To take Spots *of* Pitch, Tar, *&c. out* [illegible]

Rub either common oil, or hog's lard well [illegible] and let it lie for twenty-four or forty-eight ho[illegible] well with your hands, and wring it, and laſtly waſh it clean with with ſoap and water.

A powder to take out Spots.

Take bone-aſhes of ſheeps-legs calcin'd white, reduce them to a fine powder; lay this warm upon ſpots or ſtains, 'till it begins to change colour; then take off that, and lay on freſh, and continue ſo doing 'till the ſpot is gone.

Another for the ſame.

Take white, or wheaten-bread, juſt drawn out of the oven, lay one piece under, and another over the ſpot of a ſilk, and it will draw out the *oil* or *greaſe*.

Another for the ſame.

Mix honey with glair of eggs and *ſal-armoniac*, and lay them on the ſpot for ſome time, and afterwards waſh it with fair water.

To take out Stains.

Take half a pound of ſoap, and a quarter of a pound of fuller's earth, and one ounce of unſlak'd lime; mill all together in fair water, and after a while lay it upon the ſtains.

Another way.

Mix white *ſtarch* and water together, and make it into a pretty ſtiff paſte, with this cover the ſtains to the thickneſs of a ſhilling, and let it lie on for twenty-four hours; then rub it off, as you do dry dirt, and the ſtains will vaniſh.

To take out Spots *of* Ink.

Waſh them three or four times with juice of *lemon*, or with ſtrong white-wine *vinegar*, and it will take them out; afterwards waſh them with *Genoa ſoap*, and laſtly with fair warm water.

To take Spots *of* Ink *out of* Silk.

Take ſtrong white-wine *vinegar* and hot *aſhes*, rub them well upon the ſpots, and afterwards waſh with ſoap and water, and the work will be done.

To take Spots *of* Ink *out of Linnen or Woollen.*

Squeeze the juice of *lemons* upon the ſtains, and rub it in very well, let it dry, and repeat this three or four times, and afterwards waſh it with fair water, and the ink or iron-moulds will be vaniſh'd.

SPRING is repreſented [in *Painting*, &c.] by a young man of an exact ſtature, clothed on one ſide in white, on the other in black, a pretty broad girdle ſet with ſtars, holds a ram under his arm, and a garland of ſeveral flowers in his left hand, two wings on his feet, one white, and the other black.

Youth denotes the ſpring and beginning of the year; juſt ſtature, becauſe it is the equator, equal day and night; black and white, day and night; the girdle the equinoctial line; the ram, the ſun's entrance into that ſign; the wings, the ſwiftneſs of time.

A SPY is repreſented [in *Painting*, &c.] by a man in a noble habit, hides moſt of his face with his hat, his clothes woven with eyes, ears, and tongues, a lanthorn in one hand, his feet winged, a ſpaniel by him on the ground, his noſe in full ſcent after his game.

His clothes ſhew, that he practiſes amongſt noblemen as well as vulgar; his face, that he ought to paſs incognito, never diſcovering their deſigns; the eyes, *&c.* are the inſtruments they uſe to pleaſe the patrons; the lanthorn, that they ſpy night and day; the dog, their ſmelling out mens actions, and their inquiſitiveneſs.

STAINING LIQUORS.

To make a deep Green *ſtaining water.*

Take juice of the greeneſt worts a pint, ſtrain it through a cloth, and diſſolve in it a ſufficient quantity of purified *verdi-greaſe*; mix them well together, and it will be a good colour.

Another. Firſt ſtain the leather, parchment or paper with a *blue*, and let it dry; then lay on the yellow ſtaining colour, and it will add much to the beauty of the *green.*

A light ſtaining Green.

Take a quart of malt-wort, put into it two ſhells full of *florey*, and ſtir them well together; firſt ſtain with this, then upon this ſtaining lay *yellow*, 'till it becomes *green*; the more you lay on of your yellow ſtaining liquor, the better the *green* will be.

To make a fine Blue *ſtaining water.*

Firſt make a weak *lixivium* of *pot-aſhes*, or uſe *lime-water*; put into it a ſufficient quantity of *florey*, and a little *alum*; let it diſſolve over the fire, keeping ſtirring it, and put into it ſome wood-aſhes, and ſo you will have a fine blue.

A weaker Blue *ſtaining water.*

Diſſolve a good quantity of *florey blue*, and a little *alum*, in a ſufficient quantity of fair water; and this will make a fainter colour than the former.

A Blue *ſtaining water weaker than the laſt.*

To two quarts of pure well-water, put four ſhells full of *florey*; mix them well together, and lay them on thin, and this will be the fainteſt of the three.

STARCH is a dreg or ſediment found at the bottom of veſſels, in which the waſte or refuſe of wheat has been ſteep'd in water; of theſe dregs or ſediment, after the bran has been ſeparated from it, a ſort of loaves are form'd, which being dry'd in a furnace or the ſun, is broken into little pieces, and is the ſubſtance call'd *ſtarch*.

The beſt *ſtarch* is white, ſoft, and friable, eaſily reduc'd into powder.

But the fineſt *ſtarch* made by thoſe that are curious, is not made as the common *ſtarch-makers* do it, of the refuſe of wheat, but with the beſt and fineſt of that grain, and is made as follows:

Having cleans'd the beſt and fineſt wheat well, they put it into veſſels of clear water to ferment, and expoſe them to the ſun in its greateſt heat; and change the water twice a day, for eight, ten, or twelve days, according as the ſeaſon is.

When they perceive that the grain will burſt eaſily by the preſſure of the fingers, they account it ſufficiently fermented; then they put it handful by handful into a canvaſs bag, to ſeparate the flower from the husks; to effect which, they rub it with the hand, and beat it on planks laid croſs an empty veſſel, which is to receive the flower.

As the veſſel being fill'd with this liquor, there ſwims at the top a reddiſh water, which is to be carefully ſcummed off from time to time, and clear water put into the veſſel; this being well ſtirr'd together, is ſtrain'd through a ſieve or cloth, and what remains behind is put into another veſſel with freſh water, and expos'd to the ſun, as before, for ſome time: and as the ſediment ſettles and thickens at the bottom, the water is drain'd off four or five times by inclination of the veſſel; but without paſſing it through the ſieve.

That which remains at bottom is the *ſtarch*, this is cut in pieces to get it out of the veſſel; which being laid in the ſun to dry, is afterwards laid up for uſe.

Starch is not only for family-uſes in ſtiffening linnen, *&c.* but alſo in ſeveral trades, as perfumers, dyers, *&c.*

STATUARY is a branch of ſculpture employ'd in making ſtatues.

Statuary was at the firſt but very rude. ***Dædalus*** is ſaid to be the inventor of ſtatues, who liv'd not only before the deſtruction of *Troy*, but even before the *Argonauts*; but yet it is certain, there were ſtatuaries before him; only he is alſo ſaid to have been the firſt, who endeavour'd to give them action and motion, and make them appear as if they were alive.

Before his time, ſtatues were made with their feet join'd together, they not aiming at expreſſing motion or action. He firſt ſet the feet of his ſtatues at liberty, and gave them the attitudes of people walking and acting.

The firſt ſtatues erected to their gods are ſaid to have been made by the *Phœnicians*.

The *Greeks* exceeded the *Romans* in their ſtatues, both in workmanſhip and fancy.

STATUES are defin'd to be a piece of ſculpture, repreſenting a human figure, in full *relievo*.

But *ſtatue* is yet more ſcientifically defin'd by M. *Daviler*, to be a repreſentation of ſome perſon, diſtinguiſh'd by his birth, merit, or great actions, in high relievo and inſulate; plac'd as an ornament in ſome fine building, or expos'd in a publick place to preſerve the memory of him.

Statues are form'd with the chiſſel, of ſeveral matters, as ſtone, marble, plaiſter, *&c.*

They are alſo caſt of ſeveral metals, as lead, braſs, ſilver and gold. *See the articles* CASTING *and* FOUNDERY.

Statues are commonly diſtinguiſh'd into four kinds;

1. Thoſe which are leſs than the life.

2. Thoſe equal with the life.

3. Thoſe that exceed the life; among which, thoſe among the ancients, which did ſurpaſs the life once and an half, were of kings and emperors; and thoſe double, the life, of heroes.

4. Thoſe that exceeded the life, two or three times or more, and were call'd *Coloſſus's*, as that of *Rhodes*.

Achillean STATUES is a name given to thoſe of heroes from *Achilles*.

Allegorical STATUES were ſuch as, under human figures or other ſymbols, repreſented ſomething of another kind; as age, element, ſome part of the earth, temperament, *&c.*

Currule STATUE, thoſe where the perſons are repreſented in chariots, drawn by either two or four horſes.

Divine STATUES, were ſuch as were conſecrated to the gods, as *Apollo*, *Jupiter*, *Mars*, *Mercury*, &c. demi-gods or heroes, as *Hercules*, &c.

Equeſtrian STATUES were ſuch as repreſented ſome illuſtrious perſon on horſeback, as thoſe of King *Charles* I at *Charing-Croſs*, and of King *Charles* II. at *Stocks-market*.

Greek STATUES, ſo are call'd antique naked figures; the *Greeks* repreſenting their deities, wreſtlers, *&c.* in the *Olympic* games, which laſt us'd to perform naked.

Hydraulick STATUES, ſuch as are plac'd as ornaments on fountains, grottoes, *&c.* or that do the office of a *Jet d'eau*, pipe, *&c.* by any of its parts, or by any attribute it holds

Pedeſtrian STATUES, are *ſtatues* ſtanding on foot, as that of King *Charles* II. on the *Royal-Exchange*.

Roman STATUES, ſuch as are repreſented cloath'd after the *Roman* manner, and were different. As,

Palludatæ ſtatuæ, thoſe of emperors with long gowns over their armour.

Loricatæ ſtatuæ, thoſe of ſoldiers with cuiraſſes.

Thoracatæ ſtatuæ, thoſe of captains and cavaliers with coats of arms.

Togatæ ſtatuæ, thoſe of magiſtrates with long robes.

Trabeatæ ſtatuæ, thoſe of ſenators and augurs.

Tunicatæ ſtatuæ, thoſe of perſons clothed with a plain tunic.

Stolatæ ſtatuæ, thoſe of women with long trains.

CASTING *of* STATUES.

The firſt thing to be done towards caſting of a *ſtatue*, or any other piece of work in braſs, is to make a model in *clay*, prepar'd by the potters, who mix ſand amongſt it, to prevent the model's cleaving or breaking in drying.

When the model is finiſh'd, a mould of plaiſter is put over it, while it is freſh, becauſe the parts are apt to ſhrink with drying.

The workman begins at the bottom of the figure, which is made up of ſeveral pieces from the foot to the knee, according to the bigneſs of the model; for when the pieces are too big, the plaiſter is apt to chap.

Upon the firſt piece another is plac'd, always proportionable to the figure, and ſo continued from one to another as high as the ſhoulders, on which the head is put.

It is to be obſerv'd, that if it be a naked figure, whoſe pieces, which form the mould, being pretty big, may be peel'd off eaſily; there is no need of covering them with a [*chappe*] *ſhape*: but if the figure is with drapery, or accompanied with ornaments, which oblige the artificer to make abundance of little pieces, to be the more eaſily peel'd off, he muſt then make great *ſhapes*; that is, he muſt clothe all thoſe little pieces with other plaiſter in great bits, to incloſe the other; and oil the great, as well as the little joints, that they may not ſtick to one another.

Shapes are great pieces diſpos'd in ſuch a manner, that each of them incloſe ſeveral little ones, to which are fix'd little rings of iron, to help peel them off the more eaſily; and to make them keep in the *ſhapes*, by means of little cords tyed to the rings, and put into the *ſhapes*, the great and little pieces are mark'd with cyphers, letters, and cuts, for the eaſier knowing them, and the better ſetting of them together.

When the *mould of plaiſter* is thus made, it muſt lie; and as ſoon as it is dry, and the ſculptor is about to uſe it, if he is curious, he will not be contented with rubbing it with oil, but will heat all the parts of his model, and then fill them with wax; which he does, that the wax-work may be the more beautiful and more perfect: for when they are only rubb'd with oil, the waxen figure will commonly look mealy, becauſe the wax always ſinks in ſome part of the plaiſter; or rather the plaiſter ſinks in part of the wax, which will ſtill cauſe a more viſible defect in the picture, and the caſt will never be ſo fine.

The mould having been thus oil'd, or rather wax'd, when the workman is about to caſt a figure in braſs, he gathers all the little pieces, that are in each great piece of the *ſhape*, which he preſently oils all over with a pencil, then with another pencil he takes his compound wax, made as follows:

To ſix pound of wax put half a pound of *hog*'s greaſe, and one pound of *Burgundy-pitch*, according to the ſeaſon; for in ſummer the wax may be work'd up alone, the other drugs being only to render it the more pliant and manageable: of this ſort of wax, either ſimple or compounded, the workman lays on to about the thickneſs of a ſilver penny, on all the parts of the mould; after which, he takes the ſame compoſition, and makes cakes of it of an equal thickneſs, according as he deſires the *braſs* ſhould come, which is generally the fourth part of an inch

Theſe cakes he puts into the cavities of the moulds, and incorporates them with his fingers, with the wax that was laid on with the pencil, in ſuch ſort that they fill them all equally.

He then takes an iron grate, which ſhould be three or four inches broader than the baſis of the figure that is to be made, in which grate he raiſes once more bars of iron, turn'd according to the altitude of the figure; and pierc'd in ſeveral places to put rods through, of what length ſhall be thought neceſſary to bear up the *ſoul*, (or *nucleus*, as *Vitruvius* calls it, or *cœur*, i. e. heart, as it is call'd by the *French*) of the piece to be caſt.

The ancients made all their ſouls (the firſt rough figures made by ſtone-cutters ſo call'd) of their figures of potters-earth, horſe-dung and chaff, well beaten together; of which they form'd a figure like to that of the model.

When they had well furniſh'd this *ſoul* with pieces of iron along and athwart, according to its altitude, they flead it; that is, they took off as much of its thickneſs as they deſign'd for the *braſs*.

After they had let this *ſoul* dry, they covered it all around with pieces and bits of wax, which they took out of the *mould*, and diſpos'd of them as will be ſhewn hereafter.

This way of forming *ſouls* of figures, is practiſed by ſome founders, eſpecially for great braſs figures, becauſe the earth endures the force and violence of the fire better than plaiſter, which is commonly uſed in middling figures, and ſuch as are caſt in gold and ſilver.

However ſculptors have ſeldom occaſion to make figures of an exceſſive bigneſs, they uſe it alſo for thoſe in *braſs*, but mix brick-duſt well pounded and ſifted with it; and in working after this manner, they proceed thus:

They take the firſt lays of the mould fill'd with wax, as has been ſaid, which they ſet from bottom to top on the grate; about that, a bar of iron that is to ſupport the *ſoul*, tying them faſt together with cords, for fear the pieces ſhould ſeparate from each other, when the *ſoul* is to be made.

In order to make which, as ſoon as the firſt lay of the mould is diſpoſed of, the reſt are raiſed one after another; the ſculptor pours fine plaiſter, mix'd with brick-duſt ſifted; for the brick-duſt helps the plaiſter to reſiſt the fire, and hinders its ſpreading.

When the firſt lay of the mould is fill'd, the ſecond is done; and ſo the reſt one after another, till they are all raiſed; and the *ſoul* is made of brick-duſt and plaiſter, as high as the figure is to be.

The parts are raiſed up thus, piece by piece, that the *ſoul* may be the better manag'd; and to bear it up, iron rods are from time to time put through the principal parts beforementioned.

When all the parts of the mould are ſet together, and all the cavities fill'd, the ſhapes and all the parts of the mould are clear'd; beginning at the top, and ending at the bottom: and then the figure appears intire, covering the ſoul which is within it.

The figure muſt be adjuſted, and made like the model after which it was form'd; and to make it the more perfect, the workman may add to, or diminiſh, as is convenient, in all the parts, to give the more grace and expreſſion to certain lines: for as to the attitudes and diſpoſitions of the members, he cannot alter any thing without deſtroying the work.

When it is in its perfection, the caſts and vents are laid; theſe *caſts* are pipes of *wax*, made about an inch thick, for figures as big as the life, they being always to be proportioned to the bigneſs of the work, and even to the parts of the body, where they are plac'd.

The *vents* are alſo waxen pipes, but a little leſs; theſe pipes are made in moulds of plaiſter, of what ſize the artificer pleaſes, and then cut to about four or five inches in length.

Thoſe that are to ſerve for the caſts are plac'd one above another at ſix inches diſtance in a right line, the length of the figure, and ſometimes nearer, when there are *draperies*, and there is occaſion for a great deal of matter; when theſe pipes are apply'd to and ſoldered with the wax on the figure, ſo that the end which is not ſoldered is erected: there is a great pipe of equal bigneſs, faſtened to the end of theſe little pipes from the top of the figure to the bottom. All theſe pipes great and ſmall ſerve for the caſting of the matter, and thus three or four are made about a figure according to its bigneſs and diſpoſition; but at the ſame time that theſe pipes are made to ſerve for the caſts, the ſculptor muſt apply over againſt and at the ſide that is on the ſame line, and at four inches diſtance, leſs pipes to ſerve for *vents*, which are to be ſolder'd to the figure, and a great pipe which paſſes from top to bottom, like thoſe of the caſts. And becauſe all the wax, as ſoon as it melts, runs out of the mould, as will be ſhewn hereafter, he is very careful to ſupply all the extremities of the parts; ſtretching out from the body of the figure with theſe pipes, as the arms, fingers, drapery and other things, from whence the wax muſt run.

All theſe pipes are hollow for their lightneſs only; otherwiſe they might be fill'd, but then they would be too heavy: a ſufficient quantity of them muſt be plac'd about the figure, and the workman muſt take all poſſible care to put them in thoſe places which he would have moſt ſupply'd with metal, and which will be moſt eaſily fill'd up. Thoſe that are to ſerve for the face, ſhould be much leſs than thoſe that are to ſerve for the hands.

After having rang'd all theſe different pipes the whole depth of the figure; the great elevated pipes deſign'd for the *caſts*, meet at the top two together, five or ſix inches above the figure, at a bowl or cup of wax four inches deep, and as many diameter, to the bottom of which they are fix'd.

This cup ſerves to receive the metal, which communicates it ſelf at the ſame time to the two pipes.

Thus if there are four elevated pipes for *caſts*, there are two ſorts of cups more or leſs, as the artificer pleaſes, to carry the metal to all parts of the figure.

As to the parts which ſerve for vents, they run up to the height of the figure, higher than the others; for there is no need of their being join'd together, nor having their cups.

The waxen figure being thus prepar'd and furniſh'd with *caſts* and *vents*, the ſculptor takes a compoſition made of *putty* and cement of *crucibles*, well cleans'd and pounded; which he tempers in an earthen pot to the conſiſtence of a colour for painting, and a pretty bright one: then with a pencil he carefully covers all the figure with it, as alſo the pipes, both thoſe for the caſts and thoſe for the vents.

This muſt be done ſeveral times, and the little cracks which will happen in this compoſition, muſt from time to time be fill'd.

When all the wax is well cover'd, he puts another ſort of compoſition upon it with a pencil, that is thicker and has more ſubſtance, tho' made of the ſame ingredients before mention'd, mingled with ſome mould and horſe-dung.

After ſix or ſeven of theſe *lays*, another thicker than any of the reſt is laid on with the pencil, made of mould and horſe-dung: that being dry, another is put on, and then another till ſeven or eight: at laſt a thicker ſtill is laid on with the hand, compoſed alſo of mould and horſe-dung; and this is followed by another; but the workman muſt be ſure that every lay is dry before another is laid on, and take care not to leave any part of the *naked* and *drapery*, but what ſhall be equally cover'd with every lay.

After this he takes ſeveral flat iron bars of the height of the figure, which at bottom is faſten'd to *hooks*, that ſhould be at the ſide of the *grate*, on which the whole figure is plac'd; theſe bars muſt be at ſix inches diameter each from the other, and turn'd according to the *attitude* of the figure, in ſuch ſort that they may join to the mould, and coming from the top may meet in a kind of iron circle or bands of iron, which catch in the hooks of each bar.

Then the figure is girded from ſpace to ſpace, with other iron bands at the diſtance of ſeven or eight inches; theſe bars ought to be turn'd according to the diſpoſition of the figure, and join'd with iron threads or wire to the *bars* that mount at top.

When they are all join'd together, and in a condition to bear up the mould, the artificer takes ſome heavy mould mixt with horſe-dung and chaff, and covers all the mould and bars with it, inſomuch that it appears to be only a maſs of earth of about five inches thick: but it muſt be obſerv'd, that when a naked figure is to be caſt, which is only to be placed on its two legs; the right of the legs and thighs muſt be better ſupply'd than that of the body, with earth; becauſe when the mould begins to be ſeeth'd, the lowermoſt part being ſooner heated than the middle of the body; before the ſoul, which is to the right of the belly and ſhoulders is ſeeth'd as it ought to be, the legs and thighs, which are not ſo big, will be burnt and conſum'd with the fire before the trunk is hot through. And this caution is neceſſary in all the different pieces of work that can be made, if the workman would perform it with judgment, and prevent ſuch ill accidents as may happen upon the like occaſions.

When the mould is finiſh'd after the manner before directed, the artificer orders a hole to be dug four ſquare, large enough to contain the figure; but it muſt have a wide ſpace of at leaſt a foot or foot and a half about it, and be deeper than the mould is high; for at the bottom it ſhould have a ſort of an oven, whoſe mouth muſt be on the outſide for the putting in of the fire, and above that a ſtrong iron grate, ſtrongly ſupported by the arch and walls of the oven; which ſhould be made of *free-ſtone* or *brick*, as well as the four ſides of the hole from bottom to top.

After the grate is plac'd on the oven at the bottom of the hole, the mould is let down with engines, and the neceſſary proviſion made for it; pans are ſet under the pipes, that ſerve for *caſts* and *vents* to receive the wax that runs out of them; then the hole is cover'd by planks, and by lighting a moderate fire under the figure, that and all the place in which it is, is heated with a moderate heat, till the wax melts and runs out of the mould, none remaining behind; for if there was, it would cauſe a deformity in the figure, when the metal ran into it.

The mould muſt not be ſo hot as to make the wax boil, which might hinder its running out intirely.

When 'tis thought all the wax is melted, which may be known by the quantity which comes out, (for it muſt be weigh'd before it is put in;) the pans are taken away, and the mouths of the holes at which the wax ran out are cover'd with earth; all the void ſpace between the mould and the walls are fill'd with pieces of bricks, which are thrown down ſoftly and without ranging in order; and when that is done to the top, a good wood fire is made under the furnace. The flame being intermix'd with theſe pieces of brick, cannot aſcend with violence or damnify the mould; but communicates a heat only in paſſing through thoſe pieces of brick, which it heats, ſo that it grows red, as does alſo the mould.

After the fire has burnt about twenty-four hours, and it is perceived that the bricks and moulds are lighted from bottom to top, that fire is let out, and the moulds grow cold again; all the bricks being taken away that were about it. When the heat is quite gone, earth is thrown into the hole to fill up the vacancy left by the bricks, and as the earth is thrown down, 'tis trod upon and preſs'd againſt the mould, which therefore ſhould not be hot; for if there remains any heat in it, 'twill imbibe the moiſture, which will cauſe many inconveniences when the metal comes to be caſt.

For the melting of metal, a ſtove muſt be made by the ſide of the hole in which the mould is: the area of this ſtove ſhould be two or three inches higher than the top of the hole, that it may be ſloping.

It ſhould be built in the form of a furnace with good tile-ſhards and mould, bound with good iron hoops, and big enough for the intended work.

The ſtove being finiſh'd deep enough to contain the metal, two mouths are made above it, the one to throw the wood into, and the other to fan and give it air.

When the ſtove is very dry, a great wood-fire is made, into which the metal, with which the figure is to be caſt, is thrown.

There ſhould be a third mouth at the ſide of the hole, which muſt reach to the area of the ſtove; this mouth muſt be well ſtopp'd with earth, while the metal is melting; but ſo that it may be opened when the workman pleaſes, and by a canal of earth it has communication with a ſort of great baſin made of mould, and plac'd above the figure; the middle of which baſin is to anſwer exactly to the cups to which the *caſts* are fix'd.

This baſin is call'd by *French* workmen *Eſcheno*; it muſt be firm, and made of good pounded earth, very dry; for which end it is put into a coal fire, well dry'd and afterwards pounded.

And to prevent the metal from running into the cups, as ſoon as the oven is opened, there are men ſet to cover them with a long iron bar, thick at the end, and turn'd there like the cup: there are as many of theſe bars and theſe men, as there are cups; that is, one or two, according to the nature of the work.

When the metal is melted, the workmen open the iron door, or rather unſtop the hole, which is at the right of the *canal*; this is done with a piece of iron at the end of a long pole. The metal running out, falls into the *Eſcheno*, where when it is come, the cover is taken off the *cups*, the metal enters into the mould, and the figure is form'd in an inſtant.

When the matter has thus fill'd the mould, 'tis left three or four days; then the earth that was put about it is taken off, by which means the mould grows quite cold; and when the workman finds it has no more heat in it, he breaks it, and diſcovers the figure in metal, with the lays and eſvents or vents of the ſame metal with itſelf.

'Tis ſaw'd on the place, to clean and get the figure out the more eaſily: after that 'tis clean'd and ſcour'd with water, or with pieces of *fir* and other ſoft and ſpungy wood, rubbing the cavities of the drapery and other parts of the figure.

If it be a little figure, it is waſh'd with *aqua-fortis*, and when that water has had its effect, it is waſh'd with common water; and after it has been very well cleanſed it is repair'd, if it wants it; but great figures are never repair'd at all.

The tools uſed in repairing are the *burin*, the round and flat *graver*, a little *chiſel*, *bodkin*, and *reſſloirs*, which are a ſort of files.

When the figure is well cleans'd and repair'd, the *ſculptor* colours it, if he pleaſes: there are ſome who do it with *oil* and *red-oker*, others make it turn green with vinegar; but in time the *braſs* takes a varniſh that bears upon the black.

Thoſe who gild them do it two ways, either with *leaf-gold*, or temper'd and mix'd with *quick-ſilver*; which is the firſt and moſt excellent way, and made uſe of in little figures: for this the workman takes one part of *gold*, and the other part of *quick-ſilver*, heats the figure, and puts on this compoſition, which whitens it; and re-heating it, the fire exhales the *quick-ſilver*, and the figure remains gilt.

The other way is uſed in great figures, and where perſons would not be at much expence; the figure is ſcrap'd all over with little files and other tools to make it freſh and clear, then it is heated, and *leaf-gold* lay'd upon it, which is done four times.

BASS-RELIEFS are caſt after the ſame manner as *ſtatues*, that is, the mould is firſt fill'd with wax, after it is laid on as thick as is neceſſary; it is temper'd with plaiſter or earth, which is put on the wax, to keep it in one piece at its coming out of the mould, and to repair it the more eaſily; then it is cover'd as the mould of *ſtatues*, with ſeveral *lays* of compoſition and earth; but the pipes for the *caſts* and *eſvents* or *vents* are put behind and on the edge of *baſs-reliefs*, and ſome on the figure.

The reſt is done after the ſame manner as is mention'd for *ſtatues*.

As to the metal which is uſed, that depends upon the founder's choice; only he muſt obſerve this, that for one pound of wax there muſt be ten pound of metal, without allowance for waſte, which may be conſiderable in large figures.

For fine ſtatues the allay of the metal is half *red-copper*, and the other half *yellow*. The *Egyptians*, who are ſaid to be the inventors of this art, put two thirds of *yellow copper* and one third of *red*.

Yellow copper is made of *red copper* and *calamine*, an hundred of *calamine* increaſes forty *per cent*. *Calamine* is a ſtone that gives a yellow colour, and is found in *France* and the territory of *Liege*.

Good *red copper* ought to be beaten and not melted, before it is uſed in *ſtatues*; neither ſhould it have any allay of *lead*.

Red copper is forg'd hot and cold; *yellow copper* when 'tis cold only, it breaks if hot.

There is a ſort of metallick ſtone call'd *ſpelter*, which comes from *Egypt*, and gives *red copper* a finer yellow than *calamine*; but being ſcarcer and dearer than the latter, is rarely made uſe of.

For bell-metal, twenty pound of *tin* is put to one hundred pound of *copper*; and for pieces of ordnance, ten pound only: but this compoſition is not proper for figures, becauſe 'tis too hard and crumbly.

If the ſculptor would make little figures of *braſs*, he melts the wax, which he puts into the mould of *plaiſter:* the waxen figure is taken out of the mould in one piece and hollow, which cavity is fill'd with *plaiſter*, and left to dry, that it may ſerve for the *ſoul*; all the reſt is done as for great figures.

Of CASTING *figures, or making* STATUES *in* STUCK.

Several *ſtatues* are made in *ſtuck*. Theſe figures are for the ornament of cielings, friezes and cornіſhes.

As to the making *figures*, the firſt thing is to form the ſoul of plaiſter or lime mortar, and a cement of tile-duſt; putting bars of iron into thoſe parts of the figure that ſtand in need of being borne up.

When the ſoul is form'd, it is then cover'd with *ſtuck* to work out the figure, for which the workman has his proper tools.

In the compoſition of *ſtuck*, one pound muſt be marble duſt, and two thirds lime.

There is a ſort of *ſtuck* made of plaiſter-ſtone manag'd as marble; inſtead of which ſometimes alabaſter is made uſe of.

As for ornaments of *baſs-taille*, moulds are uſed, that they may be made more readily.

The artificer takes a mortar compoſed of lime and ſand, or tile-duſt for the firſt aſſay; and before it is quite dry, the *ſtuck* is temper'd to a compoſition that is neither too hard nor too ſoft: when 'tis laid on the place where the workman would make an ornament, he applies the mould, call'd by *French* artiſts *moulette*, made of plaiſter, or a compoſition of wax, roſin and brick-duſt, more durable than plaiſter.

The mould muſt be firſt powder'd with marble powder, which being put upon the *ſtuck*, the artificer ſtrikes it with a mallet, and the figure of the mould remains on the *ſtuck*; after this the work is clean'd, that it may appear the more ſmooth.

STEEL is a kind of iron refined and purified by fire with other ingredients, which renders it whiter, and its grain cloſer and finer.

Steel of all other metals is that ſuſceptible of the greateſt degree of hardneſs, when well temper'd; whence proceeds its great uſe in making tools and inſtruments of all kinds.

The true method of making *ſteel* has been greatly conceal'd, and the publick long abuſed by counterfeit methods.

Agricola gives us the following method, and *Kircher* affirms it is that practiſed in the iſland of *Ilva*, a place famous in all ages for the manufacture of good *ſteel*, from the time of the *Romans* to our own.

Heat a quantity of iron red-hot, cut it into ſmall pieces, mix it with a ſort of ſtone that eaſily melts. This mixture put by

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little and little into a crucible, firſt fill'd with charcoal-duſt and heated red-hot; when it is melted off, three or four, or more pieces of iron are to be put into the middle of it, and there boil'd for five or ſix hours with a ſtrong fire.

This melted matter muſt be often ſtirr'd by the workman, that the pieces of iron may ſoak in the particles of the melted iron; which particles conſume, and thin the groſſer ones of the iron pieces, and are as it were a ferment to them, and make them tender.

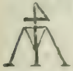
Then one of the pieces is to be taken out of the fire, and put under the great hammer to be drawn out into bars, and wrought; and hot as it is plung'd into cold water.

Having been thus tempered, it is again work'd upon the anvil; then breaking it, it is conſidered, whether in any part it looks like iron, or whether it be wholly condenſed and turn'd into *ſteel*.

To ſoften STEEL *for engraving upon.*

This is done with a *lixivium* of *oak-aſhes* and unſlak'd *lime*, by caſting the *ſteel* into it, and letting it remain for fourteen days. *Or thus*; take the gall of an ox, the urine of a man, verjuice and juice of nettles, of each alike; mix them, then quench the *ſteel* red-hot therein, four or five times together, and it will become very ſoft.

THOMAS STEVENSON was bred up under *Argas*, and became a good painter, not only in landskip, but alſo in figures, and architecture in diſtemper. He was eſpecially eminent for ſcene-painting, tho' his works are not ſo much in eſteem at this day, as when he lived.



STOLTZIUS. He engrav'd in the *Gothick* taſte, and us'd this mark.

JOHN STONE was an extraordinary copier in the reigns of *Charles* I. and II. He was bred under *Croſs*, and having the foundation of an exquiſite draughtſman, performed ſeveral admirable copies, after many good copies in *England*. He did a great number of them, and they are reckoned amongſt the fineſt of any *Engliſh* copyer. He did alſo ſome imitations after ſuch maſters, as he more particularly fancied; which performances of his are ſtill in great repute, and received into the beſt collections amongſt us. He ſpent thirty-ſeven years abroad in the ſtudy of his art, where he improved himſelf in ſeveral languages, being beſides a man of ſome learning. He died in *London* the 24th of *Auguſt* 1653, and lies buried in *St. Martin*'s.

STONES are hard, ſolid, mineral bodies, neither fuſible nor malleable, form'd in the ſucceſſion of time in the bowels or body of the earth.

As to the origin or formation of STONE, M. *Tournefort*, on his return from his travels in the eaſt, in the year 1702, propos'd to the *Royal Academy* at *Paris* a new theory.

After having curiouſly ſurvey'd the famous labyrinth of *Crete*, and obſerv'd, that ſeveral Perſons, having before engraven, or cut their names in the living rock, of which its walls were form'd; theſe letters, inſtead of being hollow, as they muſt have been at firſt (having been cut with the points of knives or ſuch like inſtruments) were prominent, and ſtood out from the ſurface of the rock, like ſo many relievo's; he concludes, that ſtones do grow, are organiz'd, and that they draw their nutritious juice from the earth. That this juice is firſt filtrated and prepared in their ſurface, which may be accounted as a kind of bark, and hence it muſt be convey'd to all the other parts.

This relievo-appearance of theſe engraven letters can be no otherwiſe accounted for, than by ſuppoſing the cavities of the letters fill'd up inſenſibly by a matter iſſuing out of the ſurface of the rock; and which iſſued even in greater abundance than was neceſſary for filling the cavities.

Thus is the wound made by the knife healed up, much after the ſame manner as the fracture of a broken bone is conſolidated by a *callus*, form'd of the extravaſated nutritious juice, which riſe above the ſurface of the bone: and this reſemblance ſeems to be the more juſt, in that, he ſays, the matter of the letters was found whitiſh, and the rock itſelf greyiſh.

Mr. *Tournefort* ſupports this opinion by ſimilar *callus's*, apparently form'd in other *ſtones*, which re-unite them, after by accident they have been broken.

From theſe obſervations it will follow, that there are *ſtones*, which do grow in quarries, and of conſequence that are fed and nouriſhed; that the ſame juice, which nouriſhes them, ſerves to rejoin their parts when broken, juſt as in the bones of animals; and the branches of broken trees, when kept up by bandages; and in effect that they do vegetate.

PETER STOOP was a *Dutch* battle-painter, who came into *England* from *Portugal* with the late Queen-Dowager; his chief ſtudy was battles, huntings, and havens, which he performed for ſome time with good ſucceſs; but after the arrival of *John Wyke* in *England*, who painted the ſame way, his pictures were not ſo much valued, by reaſon of the greater excellency of that maſter. This *Stoop* etched ſeveral prints of horſes, as alſo the Queen-Dowager's publick entry. He died about fifty years ago.

STRADA, means *Veſpaſian Strada* of *Rome*.

To dye ***Silk a*** STRAW *colour.*

Firſt alum and rinſe the ſilk, and for every pound of it boil one pound of broom-flowers for a quarter of an hour; then pour it into a tub, which muſt be in ſize proportionable to the quantity of the ſilk; then put to it an equal quantity of water, and after you have ſtirr'd the ſilk in it, fill the kettle again with water, and boil it a quarter of an hour. The ſilk being wrung out of the firſt ſuds, put them into the ſecond; and if you ſee occaſion, make a ſtronger yet, and ſtir the ſilks in it, 'till the colour is ſufficiently heightened; then rinſe it out, and hang it up to dry.

To dye Stuff a Straw *colour.*

Firſt dye the goods yellow, and throw half a pint of urine into the dye; put in the goods, and work them about, as long as you think convenient.

ROBERT STREATER was born in the year 1624, and bred up to painting and deſigning under *du Moulin*. Being a perſon of great induſtry, as well as capacity, he arrived to a very eminent degree in divers branches of his art, eſpecially in hiſtory, architecture, and perſpective, wherein he excelled all of his time in *England*, and ſhewed himſelf a great maſter by the truth of his out-lines, and the learning of fore-ſhortning of his figures, as may be ſeen by his works. He was alſo excellent in landſkip, having a mighty freedom of pencilling with equal invention, and was moreover remarkable for ſtill life, inſomuch that there are ſome of his fruit ſtill to be ſeen, which are of the higheſt *Italian* guſto, both for pencilling, judgment, and compoſition. To do him but juſtice, he was the greateſt and moſt univerſal painter that ever *England* bred, which we owe in ſome meaſure to his reading, he being reputed a very good hiſtorian, which no doubt contributed not a little to his perfection in that way of painting. Upon the reſtoration of King *Charles* II. he was made his Majeſty's Serjeant-painter. He died, after having been firſt cut for the ſtone by a ſurgeon, whom King *Charles* II. ſent for from *France*, for that purpoſe, in the year 1680, at fifty-ſix years of age, after he had lived in great reputation and eſteem all his life. His principal works were at the theatre at *Oxford*; ſome cielings at *Whitehall*, which are now burnt; the battles of the giants with the gods at Sir *Robert Clayton*'s; the pictures of *Moſes* and *Aaron* in *St. Michael*'s Church in *Cornhill*.

To put a STREET *in perſpective.*

A bare ſight of the figure may ſuffice to ſhew the method, which is exceeding eaſy.

All you have to do is to make a plan of ſimple ſquares the common way; and to take one, or two, or three of the ſquares for the breadth or length of each houſe, and in ſuch breadths, &c. to ſet off the meaſures of the doors and windows, and to get the diminutions by drawing lines from the ſeveral meaſures to the point of diſtance; as here from B C D E and F.

The firſt angle of each houſe may ſerve for a line of elevation, as the angle G in the firſt houſe.

If you require any croſs ſtreets, one, two, or three ſquares are to be left vacant, and nothing upon them, as here at H and I.

The figure underneath is to ſhew, that where houſes are to be made to advance or fall back, you have only to put their elevations forwarder or backwarder on the plan of their ſquares.

Thus L advances a ſquare farther than K, and M farther than L, and ſo of the reſt.

STRENGTH is repreſented [in *Painting*, &c.] by a woman in armour, her ſtature upright, big-boned, plump breaſts, harſh hair, ſparkling eyes, a ſpear in her hand, with an oak-branch, a ſhield on her arm with a lion and a wild boar.

All theſe denote *ſtrength*, the oak-branch and armour ſhew ſtrength of body and mind; the ſpear denotes ſuperiority procured by ſtrength; the lion and boar the ſtrength of body and mind, the one acting with moderation, the boar runs headlong with fury.

STRICTNESS is repreſented [in *Painting*, &c.] by an old woman, ſurrounded with many wreaths of ivy, holding in each hand branches of the ſame.

The power of conſtraint is attributed to the ivy, ſignifying to bind and twiſt; it was a ſad omen to the prieſts amongſt the *Romans*, even to touch it, or name it, that they might not ſeem to be any way ſtrait-laced, either in thought or deed.

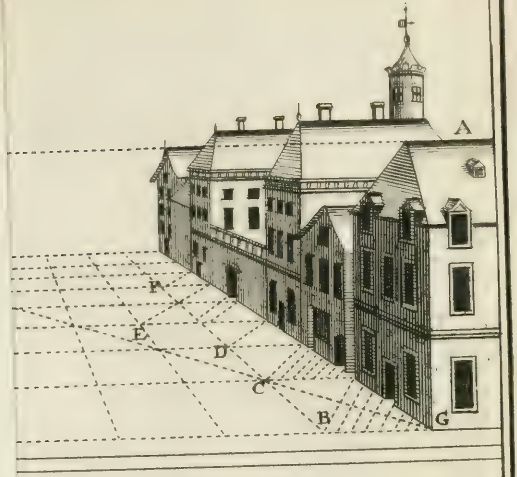
STUBBORNNESS is repreſented [in *Painting*, &c.] by a woman all in black, a great deal of ivy growing about her habit, and a leaden cap on her head.

The black denoted firmneſs and ignorance, from whence proceeds *ſtubbornneſs*; the lead denotes ignorance and unwieldineſs, the mother of the ſame; the ivy denotes, that the opinionativeneſs of obſtinate men has the ſame effect upon them, as the ivy has, which makes the wall to decay and tumble down, where it takes root.

STUCK, Marble pulveriz'd, mix'd in a certain proportion with plaiſter; the whole well ſifted, and work'd up with water, and uſed like common plaiſter. *See* STATUES.

STUDY is repreſented [in *Painting*, &c.] by a pale youth in a modeſt garb, ſitting down, his left hand on a book lying open, on which he is very intent; a pen in his right, a lamp and a cock on each ſide.

Paleneſs denotes his pining away, his ſitting his ſedentary life, his being intent ſhews ſtudy to be a great application of mind, the pen his deſire to leave ſomething behind him to make him be remembred by others; the lamp, that ſtudents ſpend more in oil than wine, the cock vigilance.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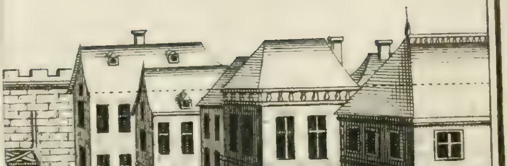
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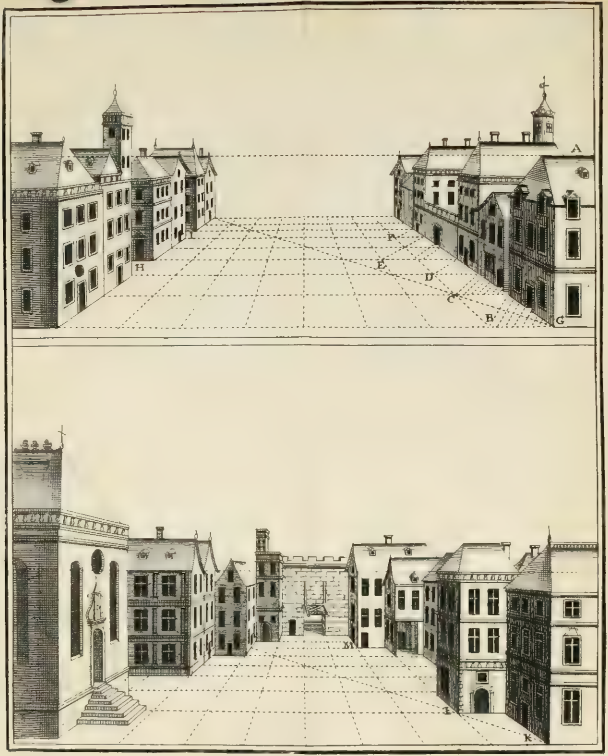
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STUPIDITY is repreſented [in *Painting*, &c.] by a woman, laying her hand upon the head of a goat, with an eringo-branch in her mouth, a *Narciſſus* flower in her left hand, crowned with the ſame.

The goat denotes *ſtupidity*. *Ariſtotle* ſays, they that have eyes, reſembling the colour of wine, are blockheads, becauſe they reſemble the goat's eyes; the *Narciſſus* is derived from the *Greek Narche* ſtupid; and *Narciſſus* ſo in love with himſelf grew ſtupid, and was drowned: the *eringo* is a ſtupifying plant.

SUBLIMATE is a chymical preparation, the baſis whereof is *mercury* or *quickſilver*.

There are two kinds of *ſublimate*, *corroſive* and *ſweet*.

The *corroſive ſublimate* is prepar'd of *mercury*, either crude or reviv'd from *cinnabar*, together with ſpirit of *nitre* and *vitriol*, lixiviated to a whiteneſs, and ſea-ſalt decrepitated, the whole reduc'd into a white brilliant maſs by *ſublimation*.

It is white, and full of ſhining cryſtalline veins.

It cannot act, unleſs it find ſome humidity to act upon, and is then a violent poiſon.

To prove the goodneſs of Sublimate.

1. Caſt it on the coals, and if it is good, it will burn of a blue flame; but if it make any other colour, it is naught, and has *arſenick* in it.

2. *Or thus:* Take the *ſublimate*, and drop thereon a few drops of *oleum tartari per deliquium*; if it turns the ſubſtance of a deep yellow, reddiſh, or orange tawney, it is good; but if not, or it be black, there is *arſenick* in it.

SUCCOUR is repreſented [in *Painting*, &c.] by a man in armour, with a drawn ſword in one hand, and an oaken branch and acorns in the other.

Armed, to help the weak and neceſſitous; the branch to help in time of ſcarcity and famine with the acorns, for anciently men had recourſe to that fruit in time of need, it being dedicated to *Jupiter*, who ſuccours every one.

EUSTACE LE SUEUR, born in the year 1617, a ſcholar of *Vouet*'s, liv'd at *Paris*, excell'd in hiſtory, died in the year 1696, aged 80 years.

SUFFERING is repreſented [in *Painting*, &c.] by a woman that looks to be pretty old, ſeeming to ſupport a huge ſtone with this motto, *Rebus me ſervo ſecundis.*

To ſuffer is, as it were to bear ſome weight, not taking notice of its weight, aiming at ſome good, and ſo men ought to bear fatigues for the love of virtue; the motto denotes the end of ſuffering, which is reſt and quietneſs, becauſe the hope of probable benefits make us endure all fatigues willingly

SULPHUR is a fat, unctuous, mineral ſubſtance, fuſible and inflammable by fire, and not diſſoluble or capable of being mingled with water.

Sulphurs are diſtinguiſh'd into *ſolid* and *fluid.*

The *ſolid ſulphurs* are *common ſulphur*, or *ſulphur* properly ſo call'd, *arſenic* and *amber*.

The *liquid ſulphurs* are *aſphaltum*, *piſaſphaltum*, *bitumen*, *petroleum*, *naptha*, and *oleum terræ*, &c.

Sulphur, properly ſo call'd, or *brimſtone*, is of three kinds; *viz. vivum*, *mineral*, and *common ſulphur.*

Sulphur vivum is thus call'd, as being ſuch as it is taken out of the mine; it is a kind of greyiſh argillous clay, which eaſily takes fire; and in burning emits a ſtrong ſulphureous ſmell, and by reaſon of its colour, it is ſometimes call'd *grey ſulphur*.

It is chiefly brought from *Sicily*, and is not much us'd, except in ſome Galenical compoſitions; and to ſulphur wine, to make it keep in carriage.

The beſt is ſoft, ſmooth, friable, and ſhining, of a mouſe-colour, and not too full of ſmell.

Mineral ſulphur, call'd alſo *yellow ſulphur*, is a kind of hard, earthy *bitumen*, of a ſhining yellow colour, a ſtrong ſtinking ſmell, eaſily taking fire, and diſſolving.

'Tis found in great quantities in the neighbourhood of *Vulcano's*, or burning mountains; as *Ætna*, *Veſuvius*, &c. and it is likewiſe found in its particular mines; and we have very good from ſeveral parts of *Italy* and *Switzerland*, tho' the beſt is that of *Quitto* and *Nicaragua* in *America*.

'Tis from this *ſulphur*, that the common *ſulphur* us'd in gun-powder, and on divers other occaſions is drawn, by means of fire and whale-oil; which diſſolving it, 'tis pour'd into moulds, and thus form'd into thoſe cylinders we find it in.

This *common ſulphur* is either better or worſe, according to the refinery it comes from. That of *Holland* has for a long time had the vogue; that of *Venice* is reckon'd the ſecond; and that of *Marſeilles* is allow'd the third.

Beſides the uſe of *ſulphur* in phyſick or chymiſtry, and the compoſition of gun-powder; it is us'd for whitening ſilks and woollen ſtuffs, for which purpoſe the vapour is contriv'd to be receiv'd by them.

Its vapour alſo whitens red roſes; and even young rooks, taken out of the neſt, and expos'd thereto, become perfectly white. It has the ſame effect on gold, which may be reſtor'd to its colour, by boiling it in water with *tartar.*

Metals are ſuppos'd to conſiſt of two eſſential parts or principles, *mercury* as the baſis or metallic matter, and *ſulphur* as the binder or cement, which fixes the fluid *mercury* into a coherent malleable maſs.

To make SULPHUR SATURNI, *to be uſed in paſtes for all artificial gems.*

Iſaac Hollandus has very well ſhewn us the way to imitate the colour of all precious ſtones.

The way to make his ſulphur for it, is this;

Take *ceruſs*, or *white lead*, ground very ſmall, put it into a great glaſs body, and pour thereon as much diſtilled vinegar as will riſe a palm above it; and as the vinegar will riſe and ſwell very much at firſt pouring on, you muſt take care to pour it on gently, 'till all the fury and noiſe be gone: Then ſet this body on a hot furnace in ſand, there to evaporate the eighth part of it away; then let it cool, and decant off the remainder of the vinegar, which will be well coloured, and full of ſalt, which keep in another glaſs veſſel. Then pour freſh diſtilled vinegar on the remainder of the *ceruſs*; ſet it again on the furnace to evaporate as before, and decant off that vinegar as the former. Reiterate this proceſs of putting freſh vinegar on your matter, and evaporating it, and decanting it off 'till it have no further colour, nor ſweetneſs; which commonly happens about the ſixth time. Take all your coloured vinegars, and carefully filtre them off; then take one or more glaſs cucurbits, and evaporate all the vinegars over a gentle fire, and you'll find remaining at bottom a ſalt of *Saturn* of lead very white.

Then take a glaſs matraſs, lute it well down to the middle of the body, and put your ſalt of lead in it, and put it on a ſand-furnace over a gentle fire for the ſpace of twenty-four hours, covering it with ſand up to the neck. Then take out your ſalt, which ought to be as red as *cinnabar*, and grind it fine on a marble: if it be yellow, you muſt put it on the fire again for twenty-four hours longer, and take care it don't melt, for then all is ſpoiled.

When your ſalt of lead is perfect, as we have ſhewn, you muſt put it again into a glaſs cucurbit, and pour diſtill'd vinegar on it as before, and decant it off, when it is enough coloured; and put freſh vinegar on the remaining ſalt, and continue 'till all the ſalt be diſſolved, and the *fæces* and dregs all ſeparated. After that, put all theſe coloured vinegars into glaſs veſſels, and let them ſtand ſix days to ſettle, then filtre them carefully, and ſeparate all the *fæces*. Then put all theſe filtred vinegars into a great glaſs body to evaporate as before, and you'll find at the bottom a very white ſalt of lead ſweet as ſugar.

This ſalt, being well-dried, diſſolve it afreſh in common water, and let it ſtand ſix days, that all the *fæces* may precipitate to the bottom. Then filtre that water, and evaporate it in a glaſs cucurbit over a gentle fire, as we have ſaid, and you'll have at bottom a ſalt more white than ſnow, and as ſweet as ſugar. Reiterate this method of diſſolving in fair water, filtering and evaporating 'till three times; then take your *ſaccharum Saturni*, and put it in a glaſs body over a ſand-furnace over a temperate heat, where leave it for ſeveral days without augmenting the fire; then it will become redder than *cinnabar*, and give a calx finer than wheaten flower.

It is this calx thus purified from all its terreſtreity, which is call'd *ſulphur of Saturn*. Now in making paſte for emerald, ſapphire, granat, topaz, chryſolite, blue, and other colours, you muſt employ it inſtead of minium in the ſame doſes as we have ſhewn elſewhere: obſerving all we have noted in the ſubject of baking, and proceeding; then you'll have ſtones of different colours, far fairer than the natural ones, and which can ſcarcely be diſtinguiſhed from them.

The paſte, made with this ſulphur, will not have that greaſe and yellowneſs, which others have; and will not be ſo apt to ſpot by the breath: upon this account, the curious will have no cauſe to repent the trouble of making this ſulphur, tho' the work be very laborious.

SUMACH, a drug us'd in dying *green*, as alſo in the preparation of black *Morocco* and other leather.

It conſiſts of the leaves and young branches of a ſhrub, not unlike the little ſervice-tree; the leaves are longiſh, pointed, and hairy: the flowers grow in cluſters, and are red like our roſes. Its fruit is a kind of grape, of a very aſtringent quality; and its ſeed almoſt oval, and incloſ'd within a *capſula* of the like figure.

SUMMER SOLSTICE is repreſented [in *Painting*, &c.] by a young man naked, wings on his feet, ſeems to retire backward; ears of corn on his head, with a circle, on which are nine ſtars, in the midſt of which is *Cancer*, a globe in one hand, the fourth part of which is darkened, and the reſt illuminated; a crab-fiſh in the other, four wings party-coloured on his feet.

Twenty-five years denote the fourth part of man's life, as the ſun going from *Aries* to *Cancer* has finiſhed the fourth part of his courſe; naked, ſhews exceſſive heat; backward, to ſhew the ſun retires when at the equinoctial; the ſtars on his head, becauſe then the ſun ſtands perpendicular over us, and makes the ſolſtice; the wings ſhew the continual circular motion; the colours denote the difference of night and day at that time.

The SUN-FLOWER *to paint:* cover it with *maſticote* and *gambooge*, and finiſh with *gall-ſtone* and *biſtre*.

Lay the green on with *verditer* and *maſticote*, and ſhade it with bladder green.

SUPERSTITION is repreſented [in *Painting*, &c.] by an old woman with a nightingale on her head, an owl and a crow on each ſide below; in her left hand a lighted candle, in the right an orb, with the planets on which ſhe gazes very timorous.

Old, becauſe ſuch perſons are moſt ſuperſtitious; the nightingale is taken for a bad omen, which by her ſinging in the night threatens bad luck, as does the owl; the candle denotes the ardent zeal ſuperſtitious perſons think they have, they fear, but do not love God; the ſtars, the vain fear of things above, and conſtellations, and doing things at one time, rather than at another, from whence aſtrology had its riſe, and from whence *ſuperſtition* flows.

SUSTENANCE is repreſented [in *Painting*, &c.] by a lady in a robe of cloth of gold; in her right hand a gleaning of corn; in her left a bunch of grapes, with milk ſpirting out of her turgid breaſts. Theſe allude to the bounty of nature, that when we are infants, we are nouriſhed with milk; when grown to maturity, with bread and wine.

SWIFTNESS is repreſented [in *Painting*, &c.] by a young woman in a looſe green habit, in a running poſture, an arrow in one hand, wings on her ſhoulders, and on her heels, like thoſe with which *Mercury* (the ſwift meſſenger of the gods) is painted; all theſe ſhew great ſwiftneſs.

JOHN SYBRECHT was a landſkip-painter, born at *Antwerp*, and brought up under his father. He was a cloſe imitator of nature in all his landſkips; and in his younger days went upon the *Rhine*, and other adjacent places, where he drew ſeveral pleaſant views in water-colours.

The Duke of *Buckingham*, in his way home from *France*, paſſing through the *Netherlands*, ſtaid ſome time at *Antwerp*, where meeting with ſeveral of this maſter's works in landſkip, he was ſo well pleaſed with them, that he invited him over to *England*, and made him his painter, and he did a great number of thoſe pictures for him at *Cliveden-Houſe*.

He alſo performed ſeveral pieces for the nobility and gentry of *England*, amongſt whom he was for ſome time in vogue.

He alſo drew ſeveral ſorts of cattle with good ſucceſs, which he commonly placed in his landſkips.

He died about thirty years ago in *London*, and lies buried in *St. James's* Church, being 73 years old.

SYMMETRY is repreſented [in *Painting*, &c.] by a woman at perfect age, naked, of ſingular beauty, and all her members are uniform, and correſpond with her beauty; a piece of cloth goes acroſs her, all ſpangled with ſtars; a curious piece of architecture by her, in one hand is a plumb-line, and compaſſes in the other, going to meaſure the ſtature of *Venus*.

Her age ſhews her arrived at her juſt proportion; naked, to ſhew that all the parts ought to correſpond in true proportions; the inſtruments are to meaſure the uniformity.

SYMPATHETICK *Inks* are ſuch as can be made to appear and diſappear very ſuddenly, by the application of ſomething that ſeems to work by *ſympathy*.

Take unſlak'd lime two or three parts, and one of yellow orpiment; reduce them to powder, and mix them, adding to them fifteen or ſixteen times as much water, as you have orpiment; put them into a glaſs bottle or vial, and ſtop them with a cork and bladder, and ſet it in warm embers, ſhaking the vial now and then for five hours, and then warily decant the clear part, or rather filtrate it.

In the mean time, burn a piece of cork thoroughly; and when it is well inflamed, quench it in common water, or rather in *brandy*. It being thus reduc'd to a friable coal, grind it in fair water, in which gum has been diſſolv'd, and it will make a liquor as black as *common ink*.

While this is preparing, diſſolve a quantity of *red lead* in three times as much diſtill'd or ſtrong *vinegar* over warm embers, or of *ſaccharum Saturni* in three times the quantity of water for three or four hours, or 'till the liquor has a ſweet taſte. This liquor will be as clear as common water.

Having prepar'd the *inks* as before directed, write what you would write on paper with this laſt liquor, dry it, and nothing will appear.

Over the place write what you pleaſe with the ſecond liquor, and it will appear as common *ink*. When it is dry, dip a piece of rag or ſpunge in the firſt liquor, rub it over the written place, and the black writing will vaniſh; and that wrote with the *inviſible ink* will appear black and legible.

Again, take a book four or five inches thick, and on the firſt leaf write any thing with the laſt liquor; turn to the other end of the book, and rub therewith a rag dipt in the firſt liquor, on that part, as near as you can gueſs, oppoſite to the writing; and leave alſo the rag there, clapping a paper over it. Then ſhutting the book nimbly, ſtrike four or five ſmart ſtrokes thereon with your hand, and turning the other ſide uppermoſt, clap it into a preſs, or lay it under a good weight for a quarter of an hour, or half that time; then will the writing, done with the inviſible *ink*, be found legible.

2. Diſſolve white or green *vitriol* in water, and writing with the ſolution, nothing will appear.

Boil galls in water, and dip a linnen rag in the decoction, and with it rub the place written before, and it will appear black and legible.

Rub it over again with ſpirit of *vitriol*, or its oil, and the writing will diſappear again: rub it over again with oil of *tartar per deliquium*, and the letters will appear again, but of a yellow colour.

T.

TABBYING, is the paſſing a ſilk or ſtuff under a calender, the rolls of which are made of iron or copper, variouſly engraven, which bearing unequally on the ſtuff, render the ſurface thereof unequal, ſo as to reflect the rays of light indifferently, making the repreſentation of waves thereon, as on a *tabby*.

It is perform'd without the addition of any water or dye; and furniſhes the modern philoſophers with a ſtrong proof, that colours are nothing but appearances.

TACAMACHA, } Is a ſort of reſinous gum, which diſtils
TACAMAHACA, } from the trunk of a very large tree growing in *New Spain*, but moſt plentifully in the iſland of *Madagaſcar*.

There are of it three different ſorts; the *ſublime* call'd *Tacamacha* in the pod, *Tacamacha* in the maſs, and *Tacamacha* in tears.

The firſt is the natural reſin, as it falls of itſelf, without making any inciſion in the tree. To be good, it ſhould be dry, reddiſh, tranſparent, of a bitter taſte, and a ſtrong ſmell, reſembling that of lavender. It is gathered by the iſlanders in little gourds, cut in two, and covered with a palm leaf.

The *Tacamacha* in *tears* and in the *maſs*, are thoſe which flow from the tree out of inciſions: it ought to be choſen dry and clear, and the ſmell much the ſame with the firſt ſort.

This gum is us'd in ſome varniſhes.

COLOURS *for* TAFFETY, CLOTH, *and* LEATHER.

Taffeties are painted much after the ſame manner as *ſattins* are; therefore take ſuch as are fit for the purpoſe, and lay them one by another, and ſhadow them with others.

Cloth is done after the ſame manner as *ſattin*, except that there muſt not be given to cloth ſo ſudden a ſhining gloſs.

Cloth of gold is imitated with *brown oker* and liquid gold; water and heighten upon the ſame with ſmall gold ſtrokes.

For *buff*, temper up *yellow oker* with white lead; and where it ſhould be dark, by degrees mix a little umber with it, and afterwards ſize it over with umber and ſea-coal black.

For *black leather*, uſe *lamp-black*, and ſhadow it with *white lead*.

For *white leather* uſe *white lead*, and ſhadow it with *ivory-black*.

For *yellow leather* uſe *maſticote* and *yellow oker*, and ſhadow it with *umber*.

TALC } Is a ſhining, flaky, or ſcaly, fiſſile ſtone, which may
TALK } be eaſily ſeparated into tranſparent leaves or ſcales.

It was formerly found in mines in *Cyprus*, *Cappadocia*, *Arabia*, and *Africa*; but at preſent it is chiefly dug out of the *Alps* and *Appennines*, ſeveral mountains in *Germany*, and alſo in *England*, particularly in *Northamptonſhire*.

It is uſually diſtinguiſh'd into two kinds; the *white talc* of *Venice*, and the *red* of *Muſcovy*.

That from *Venice* is accounted the beſt: it is brought to us in large, green, ſhining ſtones; but when it is wrought, becomes white and exceeding tranſparent.

It is us'd to be put before paintings in miniature, and crayons, to preſerve them, it being parted into thin lamina or ſlices.

The *talc* brought from *Muſcovy* is found in quarries either there or in *Perſia*, is reddiſh when in the ſtone, tho' it ſeldom comes to us otherwiſe than in leaves, which are hard, ſmooth, poliſh'd, and exceeding tranſparent, and is us'd as the other to put before paintings, and alſo for making lanthorns.

TAN, the bark of a young oak beaten ſmall, and us'd by curriers for the tanning or dreſſing of leather.

TANNER, one who dreſſes hides, *&c.* by *tanning*, ſo as to make leather of them: he uſes much bark in the way of his employment, concerning which there are ſeveral terms.

1. *Scutching the bark*, which is the cleanſing it from moſs, and the rough cruſty outward rind, with an inſtrument call'd a ſcutching-knife.

2. *Hewing the bark*, that is, chopping it into ſmall pieces.

3. *Grinding it*, by putting it under the mill to grind it ſmall.

4. *Drying the bark*, which is drying it, that it may grind.

5. *Setting down*. 6. *Stretching*. 7. *Laying down*.

TANNERS MILL, an engine made uſe of by *tanners* for the grinding and cruſhing their bark; being a large, round, wooden trough, with a pretty big ſtone ſet on edge, or turning part, with ſharp ſtrong knives, leaded into the ſtone; which ſtone being turned in the trough, cauſes the irons to cut the bark very ſmall.

TANNING ENGINE. A convenient inſtrument for this purpoſe may be made, of a long, ſquare, wooden block, and ſome pieces of iron to be faſten'd on, and us'd about it, *viz.* an *anvil*, an *hammer*, an iron holding the wood to be bruiſed and cut, and a *knife* to cut the ſame.

Now oak or elm is accounted beſt for the block; the dimenſions whereof may be as follows: the length of the block about four foot, the breadth fifteen or ſixteen inches, and the depth eight or ten inches: there are to be alſo iron pieces, and a ſquare hollow, to receive a plate of iron, ſerving for an *anvil,* for beating and bruiſing the *tanning* ſtuff upon; which *anvil* may be about four inches deep, nine inches broad, and twelve inches long. Then there is the iron for claſping and holding the materials to be bruiſed and cut; which iron muſt lie croſs the engine, about the middle of the ſaid piece of timber, and may be about three inches broad: it is to have two hooks at one end, which are turn'd upwards, and muſt be hook'd into the loops of the two hinges, that are let in and faſten'd to the ſide of the engine, in ſuch manner that this claſping piece may have liberty to be raiſed a little for putting the *tanning* ſtuff under it.

At the other ſide, there is to be a ſingle hook, likewiſe turn'd upwards to hang a weight upon, while the ſtuff is bruiſing upon the anvil, or cutting by the knife. The bottom ſerves to take up this piece by, and all on the other ſide of the block are the places for the four feet to ſet this engine upon, which are of a convenient height to work upon it.

The next thing to be provided is a *hammer*, for beating and bruiſing the ſtuff, which may be of the weight of ſix pounds, and have the head about three inches ſquare to work with both hands; but to work with one hand, or for a youth to uſe, let it be about three pounds weight and two inches ſquare. The ſurface of one end of theſe hammers will be beſt to be ſmooth; but that of the other end, the better to enter into the ſtuff, rough or with an edge or point: they muſt be well ſteel'd at both ends; and their handles may be about a foot long.

There muſt be alſo a *knife* to cut the ſtuff, which muſt be eight or nine inches broad, and near as much in length, made like a *tobacco* knife with a handle to work; this knife ſhould be faſten'd to the block at the two oppoſite ſides, that are to be hollow'd with two grooves, and this faſtening is to be perform'd by two pieces of iron, to be fitted into the ſaid grooves, to hold and guide the knife in working. One piece is to be faſten'd to the end of the *knife* by a pin paſſing through three holes, and this end is to be ſcrew'd into the groove by a pair of ſcrew-pins; then another piece being fork'd, is to receive the other end of the *knife*, the ſolid ſquare part of which, is to be fix'd in the groove that is underneath, by two iron plates, under which, it muſt run in the ſaid groove, ſo as that it may be ſlipp'd out from under it, and laid by when the engine is not uſed; at which time alſo the piece of the other end may be unſcrew'd and laid up.

The two long ſquares upon one end of the block are two iron plates to be faſten'd, where the *knife* moving in a fit cavity is to cut the bruiſed ſtuff between them; and of theſe plates, that which lies next the end is to be laid a little lower, the block being there pared accordingly, that ſo the ſtuff may fall off from the end of the engine quicker, as the left hand furniſhes the knife with the materials to be bruiſed, while the right hand is cutting them: let the hollow place where the knife cuts, be as near as may be ſo big only, that the knife may eaſily fall and riſe; and let the block be hollow'd under the cutting-hole, and ſloped off at that end, for the ſtuff to fall off as the knife cuts it.

TANNING *of Leather*. As for the beſt and cheapeſt way of managing this affair, it ought to be that every part of the oak-tree, of what age or growth ſoever, and all oaken coppice-wood of any age or ſize, being cut and procur'd in barking time, will tan all ſorts of leather, as well at leaſt as bark alone; this material therefore being got in its proper ſeaſon, it muſt be very well dry'd in the ſun, and more than bark; then houſed dry, and kept dry for uſe.

When it is to be uſed, the greater wood may be ſhaved ſmall or cleft fit for the engine, and the ſmaller bruiſed, and cut ſmall by the engine; which being done, it muſt be dry'd again very well upon a kiln, and then ground, as tanners uſually do their bark.

Such wood as is to be made uſe of preſently after it is got, will require the better and more drying upon the kiln, otherwiſe it will blacken and ſpoil all the leather.

Where oak is ſcarce, thorns may indifferently ſupply that ſcarcity.

Now all theſe ingredients will tan better than bark alone, and that with far leſs charge; and by this means the felling of timber, when the ſap is up, may be prevented; which when it is done, cauſes the outſides of the trees to rot and grow worm-eaten; whereas, if the trees had been fell'd in winter, when the ſap was down, they would have been all heart, (as it is call'd) and not ſubject to worms.

TANNING is the preparing of hides or skins of animals in a pit with *tan* and water, after the hair has been firſt taken off, by putting the skins into lime-water.

The method of tanning *the hides of oxen, cows, horſes,* &c.

If the skins are intended to be kept, after they have been flead off the carcaſs they are ſalted with *ſea-ſalt* and *alum*, or with a kind of *ſalt-petre* call'd *natron*.

But if they are not deſign'd for keeping, the ſalting is omitted, as being of no uſe; but to prevent the hide from corrupting, before it can conveniently be carried to the *tan-houſe*.

Whether the hides have been ſalted or not, the firſt thing the *tanner* does, is to take off the horns, ears, and tail; which being done, he throws them into running water for about thirty hours to cleanſe them from the blood, and other impurities that adhere to the inſide.

After this, they are laid over night in a *lime*-pit that has been uſed; out of which, they are taken and left to drain three or four days on the edge of a pit.

This firſt and ſlighteſt preparation being over, it is returned into a ſtrong *lime*-pit for two days, and then taken out four more; and thus for ſix weeks alternately, taken out and put in twice a week.

At the end of ſix weeks they are put into a freſh pit, where they continue eight days, and are taken out for ſo many; and this is done alternately for twelve or eighteen months, according to the ſtrength of the *leather* or the weather: for in great heats they put in freſh *lime* twice a week; and in froſt they ſometimes don't meddle with them for three months. Every freſh *lime*-pit they throw them into, is ſtronger and ſtronger.

At four, five, or ſix weeks end, the hair is ſcrap'd off on a wooden leg or horſe, with a kind of knife for that purpoſe; and after a year or eighteen months, the hair being perfectly got off, they are waſh'd in a river, and the fleſh is par'd off on the leg with a kind of cutting-knife, and the hides are rubb'd briskly with a ſort of whetſtone, to take off any remains of fleſh or filth on the hair ſide.

This being done, they put the skin into the *tan*, and cover it over with *tan*, as 'tis ſtretch'd in the pit, and water let in upon it: if the skin be ſtrong, five coverings of *tan* will be requiſite; but three or four may ſuffice for weaker.

When the skin has not been kept long enough in *lime* or the *tan*-pit, upon cleaving it in the middle, a whitiſh ſtreak is ſeen, call'd the horn or crudity of the skin; and this is the reaſon why the ſoles of boots, ſhoes, *&c.* ſtretch ſo eaſily and take in water.

When the hides are ſufficiently *tann'd*, they are taken out of the pit to be dry'd, by hanging in the air: then they clean the *tan* off of them, and put them into a place neither too dry nor too moiſt; ſtretching them well over one another with a weight at top, to keep them tight and ſtreight; and then they are fit for ſale, under the denomination of bend *leather*.

This is the method of *tanning* the hides of oxen or bullocks: the hides of cows, or horſes, and calves are tann'd much after the ſame manner as oxen; excepting that the former are only kept four months in the *lime*-pit, and that they muſt have a preparation before they are put into the *tan*-pit as follows:

The skins being put into a wooden vat or tub, cold water is pour'd to them; in which they are kept ſtirring while ſome other water is warming in a kettle, which water, when it is a little more than luke-warm, is pour'd gently into the vat, and a basket of *tan* is thrown upon it; during which time, the skins are ſtill kept turning, that the water and *tan* may not burn them.

After an hour they are taken out, and caſt for a day in cold water; then return'd into the former vat, and the ſame water they were in before; in which, they are let lie for eight days; which being expir'd, they are put in the *tan*-pit, and three coverings of *tan* given them; the firſt of which laſts five weeks, the ſecond ſix, and the third two months.

The reſt of the proceſs, is in all reſpects the ſame as that above deliver'd.

TAPESTRY is a curious kind of manufacture, ſerving to adorn a chamber or other apartment by hanging or covering the walls thereof.

It is a kind of woven hangings; of wool and ſilk frequently raiſed and inriched with gold and ſilver, repreſenting figures of men, animals, landskips, hiſtories, *&c.*

The invention of *tapeſtry* ſeems to have come to us from the *Levant*, and this ſeems the more probable, in that the workmen concern'd in it were call'd, at leaſt in *France*, *Sarraſins* or *Sarraſinois.*

It is ſuppoſed that the *Engliſh* and *Flemiſh*, who were the firſt that excelled in making *tapeſtry* might bring the art with them from ſome of the croiſades or expeditions againſt the *Sarraſins.*

Be this as it will, it is certain, thoſe two nations, eſpecially the *Engliſh*, were the firſt who ſet on foot this noble and rich manufacture in *Europe*, now one of the fineſt ornaments of palaces, baſilicks, churches, *&c.*

And therefore if they may not be allow'd to be the inventors, they have at leaſt the glory of being the reſtorers of this ſo curious and admirable art, as gives a kind of life to wools and ſilks in no reſpect inferior to the paintings of the beſt maſters.

It was late before the *French* apply'd themſelves to *tapeſtry.* The firſt eſtabliſhment of that kind was under *Henry* IV. in the year 1607, in the *Fauxbourg* of *St. Michael:* but this fell with the death of that Prince. This manufacture was reviv'd in the time of *Louis* XIV. by the care and addreſs of the great Monſieur *Colbert*, to whom the eſtabliſhment of the *Gobelins* is owing; a royal *tapeſtry* manufacture, which has produc'd works in this kind, ſcarce inferior to the fineſt *Engliſh* or *Flemiſh tapeſtry*; either as to the deſigns, the colours, or the firmneſs.

Tapeſtry work is diſtinguiſh'd by the workmen into two kinds, *viz.* that of the *high* and that of the *low warp*; tho' the difference is rather in the manner of working than in the work itſelf; which is in effect the ſame in both; only the looms and conſequently the *warps* are differently ſituated.

Thoſe of the *low warp* being plac'd flat and parallel to the *Horizon*, and thoſe on the contrary of the *high warp* erected perpendicularly.

The *Engliſh* antiently excell'd all the world in the *tapeſtry* of the *high warp*, and they ſtill retain their former reputation; tho' with ſome little change; their *low warps* are ſtill admir'd; but as for the *high ones*, they are quite laid aſide by the *French*.

The *French* have three conſiderable *Tapeſtry*-manufactures beſides that of the *Gobelins*; the firſt at *Aubuſſon* in *Auvergne*, the ſecond is at *Felletin* in the *Upper Marche*, and the third at *Beauvais*.

They were all equally eſtabliſh'd for the *high* and the *low warp*; but they have all laid aſide the *high warp*, excepting the *Gobelins*.

There are admirable *low warps* in *Flanders*, generally exceeding thoſe of *France*; the chief and almoſt only *Flemiſh* manufactures are at *Bruſſels*, *Antwerp*, *Oudenard*, *Liſle*, *Tournay*, *Bruges*, and *Valenciennes*.

At *Bruſſels* and *Antwerp* they ſucceed both in *human figures*, in *animals* and *landskips*; and that both with regard to the deſigns and the workmanſhip.

At *Oudenard*, their *landskips* and *animals* are good, but their *human figures* bad. *Liſle* and the other cities named come behind *Oudenard*.

The *French* manufactories of *Felletin* do tolerably well in *landskips*, *Aubuſſon* in *figures*; and *Beauvais* in both.

The uſual widths of *tapeſtries* are from two ells to three ells *Paris*-meaſure.

The Manufacture of TAPESTRY *of the* High-Warp.

The *loom*, whereon 'tis wrought, is plac'd perpendicularly: it conſiſts of four principal pieces; two long planks or cheeks of wood, and two thick rollers or beams.

The planks are ſet upright, and the beams acroſs 'em, one at the top, and the other at the bottom, at about a foot diſtance from the ground.

They have each their *trunnions*, by which they are ſuſpended on the planks, and are turn'd with bars.

In each roller is a groove from one end to the other, capable of containing a long round piece of wood, faſten'd therein with hooks.

The uſe of it is to tye the ends of the *warp* to.

The *warp*, which is a kind of worſted or twiſted woollen thread, is wound on the upper roller; and the work as faſt as wove is wound on the lower.

Within ſide the planks, which are ſeven or eight foot high, fourteen or fifteen inches broad, and three or four thick, are holes pierc'd from top to bottom, in which are put thick pieces of iron, with hooks at one end, ſerving to ſuſtain the coat ſtave: theſe pieces of iron have alſo holes pierc'd, by putting a pin in which, the ſtave is drawn nearer or ſet further off; and thus the coats or threads are ſtretch'd or looſen'd at pleaſure.

The coat-ſtave is about three inches diameter, and runs all the length of the *loom*; on this are fix'd the coats or threads, which make the threads of the *warp* croſs each other. It has much the ſame effect here, as the ſpring-ſtave, and treddles have in the common *looms*.

The coats are little threads faſten'd to each thread of the *warp* with a kind of ſliding knot, which forms a ſort of maſh or ring. They ſerve to keep the *warp* open for the paſſage of broaches wound with ſilks, woollens, or other matters uſed in the piece of *tapeſtry*.

In the laſt place, there are a number of little ſticks of different lengths; but all about an inch diameter, which the workman keeps by him in baskets, to ſerve to make the threads of the *warp* croſs each other, by paſſing them acroſs: and that the threads thus croſs'd may retain their proper ſituation, a packthread is run among the threads, above the ſtick.

The *loom* being thus form'd, and mounted with its *warp*, the firſt thing the workman does, is to draw on the threads of this *warp*, the principal lines and ſtrokes of the deſign to be repreſented on the piece of *tapeſtry*; which is done by applying cartoons, made from the painting he intends to copy, to the ſide that is to be the wrong ſide of the piece, and then with a *black-lead* pencil following and tracing out the contours thereof on the thread of the right ſide; ſo that the ſtrokes appear equally both before and behind.

As for the original deſign the work is to be finiſh'd by, 'tis hung up behind the workmen, and wound on a long ſtaff from which a piece is unroll'd from time to time, as the work proceeds.

Beſides the *loom*, &c. here deſcrib'd, there are three other principal inſtruments requir'd for working the ſilk or the wool of the woof within the threads of the *warp*; theſe are a broach, a reed and iron-needle.

The broach is made of a hard wood, ſeven or eight inches long, and two thirds of an inch thick, ending in a point with a little handle. This ſerves as a ſhuttle; the ſilks, woollens, gold or ſilver to be uſed in the work, being wound on it.

The reed or comb is alſo of wood, eight or nine inches long, and an inch thick on the back, whence it grows leſs and leſs to the extremity of the teeth, which are more or leſs apart, according to the greater or leſſer degree of fineneſs of the intended work.

Laſtly, the needle is in form of the common needle; only bigger and longer. Its uſe is to preſs cloſe the wool and ſilks, when there is any line or colour that does not fit well.

All things being prepar'd for the work, and the workman ready to begin, he places himſelf on the wrong ſide the piece, with his back towards the deſign; ſo that he works as it were blindfold, ſeeing nothing of what he does, and being oblig'd to quit his poſt and go to the other ſide the *loom*, whenever he would view and examine the piece to correct it with his preſſing-needle.

To put any ſilk, *&c.* in the *warp*, he firſt turns and looks at the deſign, then taking a broach full of the proper colour, he places it among the threads of the *warp*, which he brings croſs each other with his fingers, by means of the coats or threads, faſten'd to the ſtaff; this he repeats every time he is to change his colour.

Having plac'd the ſilk or wool, he beats it with his reed or comb; and when he has thus wrought in ſeveral rows over each other, he goes to ſee the effect they have, in order to reform the contours with his needle, if there be occaſion.

As the work advances, it is roll'd upon the lower beam; and when he has thus wrought, they roll it upon the lower beam, and unroll as much *warp* from the upper beam as ſuffices them to continue the piece; the like they do of the deſign behind them.

When the pieces are wide, ſeveral workmen may be employ'd at once.

We have but two things to add; the firſt is, that this *high-warp tapeſtry* goes on much more ſlowly than the *low-warp*, and takes up almoſt twice the time and trouble.

The ſecond is, that all the difference that the eye can obſerve between the two kinds conſiſts in this, that in the *low-warp* there is a red fillet about one twelfth of an inch broad, running on each ſide from top to bottom; which is wanting in the *high-warp.*

The manufacture of TAPESTRY *of the* Low-Warp.

The *loom* or frame wherein the *low-warp* is wrought, is much like that of the weavers; the principal parts thereof are two ſtrong pieces of wood, forming the ſides of the *loom*; and bearing a beam or roller at each end: they are ſuſtain'd at bottom with other long pieces of wood, in manner of treſſles; and to keep them the firmer, are likewiſe faſtened to the floor with a kind of buttreſſes, which prevent any ſhaking, though there are ſometimes four or five workmen leaning on the beam at once.

The rollers have each their trunnions, by which they are ſuſtain'd; they are turn'd by large iron pins three foot long.

Along each beam runs a groove, in which is plac'd the *wich*, a piece of wood of above two inches diameter, and almoſt the length of the roller: this piece fills the groove intirely, and is faſtened therein from ſpace to ſpace by wooden pins.

To the two wiches are faſtened the two extremities of the warp, which is wound on the further roller, and the work as it advances on the nearer.

Acroſs the two ſides, almoſt in the middle of the loom, paſſes a wooden bar, which ſuſtains little pieces of wood, not unlike the beam of a balance: to theſe pieces are faſtened ſtrings, which bear certain ſpring-ſtaves, wherewith the workman by means of two treadles under the loom, on which he ſets his feet, gives a motion to the coats, and makes the threads of the warp riſe and fall alternately.

Each loom has more or fewer of theſe ſpring-ſtaves, and each ſtave more or fewer coats, as the *tapeſtry* conſiſts of more or fewer threads.

The deſign or painting the *tapeſtry-man* is to follow, is placed underneath the warp, where it is ſuſtained from ſpace to ſpace with ſtrings, by which the deſign is brought nearer to the warp.

The loom being mounted, there are two inſtruments us'd in working of it, *viz.* the *reed* and the *flute.*

The *flute* does the office of the weaver's ſhuttle: 'tis made of a hard poliſh'd wood three or four lines thick at the ends, and ſomewhat more in the middle, and three or four inches long. On it are wound the ſilks, or other matters to be us'd as the woof of the *tapeſtry.*

The *comb* or *reed* is of wood or ivory; it has uſually teeth on both ſides; it is about an inch thick in the middle, but diminiſhes each way to the extremity of the teeth; this ſerves to beat the threads of the woof cloſe to each other, as faſt as the workman has paſs'd and plac'd them with his flute among the threads of the warp.

The workman is ſeated on a bench before the loom, with his breaſt againſt the beam, only a cuſhion or pillow between them; and in this poſture ſeparating with his fingers the threads of the warp, that he may ſee the deſign underneath; and taking a flute, wound with the proper colour, he paſſes it among the threads, after having rais'd or lower'd them by means of the treadles, moving the ſpring-ſtaves and coats.

Laſtly, to preſs and cloſe the threads of the ſilk or yarn, *&c.* this place he ſtrikes each courſe (*i.e.* what the flute leaves in its paſſing and coming back again) with the reed.

That which is very remarkable in the manufacture of the low warp, and which is common to it with the high, is, that it is all wrought on the wrong ſide; ſo that the workman cannot ſee the right ſide of his *tapeſtry*, 'till the piece is finiſh'd and taken out of the loom.

TARTAR, a kind of ſalt, which is produc'd from fumous wines, which ſticks to the top and ſides of casks, and forms a greyiſh cruſt, and hardens to the conſiſtence of a ſtone.

The goodneſs of *tartar* rather depends upon repeated fermentations; which a ſucceſſion of new wines in the ſame cask for ſeveral years makes, than on the ſoil or climate where the wine is produc'd.

Tartar is either *white* or *red*, according to the colour of the wine it is produc'd from.

That which comes from *Germany* is accounted the beſt, as being taken out of thoſe monſtrous tuns, ſome of which hold 1000 pipes of wine, ſo that the ſalt has time to come to its conſiſtence, which is one of the chief qualities to be regarded in *tartar*.

That of *Montpellier* is the next in order; then that of *Lyons*, *Paris*, &c.

White tartar is preferr'd, and for ſome uſes is really better: the marks of good *tartar*, of either kind, are, its being thick, brittle, brilliant, and very little earthy.

Tartar is of conſiderable uſe with *dyers*, as it ſerves to diſpoſe the ſtuffs to take the colours the better.

Salt of tartar is made of *tartar* waſh'd, ground, purified and calcin'd in paper by a reverberatory fire; or it is made by pulverizing what remains in the retort, after the diſtillation of *tartar*. On the one or the other of theſe preparations, they pour a great quantity of hot water to make a lye of it; this they filtrate, and evaporate the liquor by a ſand-heat, 'till the fix'd ſalt be found at the bottom of the veſſel: this is the *alkali* or fix'd *ſalt of tartar*.

The way to calcine Tartar.

We have already given one preparation of *tartar*, both for the calcination of it, and to extract the ſalt; and have largely ſhewn of what importance it is to dry it thoroughly: for that reaſon we will not repeat it here, but refer the reader thither.

To make this calcination, which is eaſy, take *tartar* in great lumps, the thickeſt and moſt ſhining you can get, blow away all the powder, then put it in new earthen pots upon live coals, or in a little furnace, where you muſt leave it 'till it ſmoaks no more, and all its humidity be exhaled, and it be reduced into lumps of a black purpliſh colour; then it is calcined and well-prepared.

Tartar may alſo be calcined by wrapping it in pieces of brown paper; then lay a bed of live coals, and lay a bundle of them upon it; then another layer, or bed of coals, and on them another parcel of *tartar:* continue thus to do S. S. S. 'till all your parcels of *tartar* be laid on, obſerving that the upper layer be always of coals; and leave the whole in that ſtate 'till the *tartar* be well calcined, and leaves off ſmoaking; then take it off, and blow away the aſhes.

The way of making a very fine and pure Salt of Tartar.

Neri makes uſe of no *ſalt of tartar* in all his preparations of artificial gems; notwithſtanding, this *ſalt* being prepared after a certain way, we ſhall here relate for the ſake of the curious. It ſerves in a great meaſure to work the cryſtal, being a true vehicle for the better introducing the colours that are to be given, and which is of uſe for the tinctures ſeveral ways.

Thoſe, who in the operations of artificial gems have made no uſe of *ſalt of tartar*, have without doubt been ignorant of this fine preparation of it; for if you uſe ordinary *ſalt of tartar*, there is a ſulphur and foulneſs in it, which renders cryſtal obſcure, and conſequently would be hurtful in theſe operations.

To make this ſalt, you muſt calcine your *tartar* 'till it becomes grey, and not to perfect whiteneſs, and then diſſolve it in warm water to extract the ſalt, filter that water, and then evaporate it over the fire; then you'll have remaining at the bottom of the veſſel a white ſalt.

To take away all foulneſs from the ſalt, diſſolve it again in warm water, then evaporate it again over a gentle fire, take it off the fire, and caſt it into cold water, and you'll find it will leave on the ſurface of the water a thick froth, which you muſt skim off with a skimmer, that has little holes no bigger than a ſmall pin's head; put the veſſel again on the fire, and evaporate the water as before; then take it off the fire, and caſt upon it freſh cold water, and skim it well as before; reiterate this proceſs 'till you find no more froth, then evaporate the whole over a gentle fire 'till it be dry, and you will have a *ſalt of tartar* well purified, which is not ſo fuſible as the other, becauſe it is free from all that unctuoſity, which cauſes the fuſion.

Keep this *ſalt of tartar* in a veſſel well-ſtopped, and uſe of it in cryſtal with your colours, when you ſet them to melt.

Altho' this *ſalt of tartar* be very fine and pure, yet it is not that of the philoſophers, which has far more virtue, and opens more powerfully the metals and minerals where it is employed, tho' it be of the ſame nature as this, and extracted from the ſame principal.

The way of purifying Salt of Tartar.

Take *tartar* of red wine the biggeſt lumps, calcine it in earthen pots in a ſtrong fire, 'till it becomes black, and all the unctuoſity be exhaled, and 'till it begins to grow white; then put this *tartar* into earthen veſſels glaz'd, fill them with common water, and boil over a gentle fire, ſo that in the ſpace of two hours the fourth part of the water may be evaporated.

Then take them from the fire, and when the water is cool, and become clear, decant it off gently, without troubling the *fæces* or ſediment, and you'll have a ſtrong ſharp lee. Then fill the veſſels again, wherein the *fæces* remain with common water, and let them boil as before; then let them cool again, and decant them off as before, and repeat this 'till the water become inſipid: when you have done this, filter the lees, and put them into glaſs bodies to evaporate in the aſhes at a gentle heat, and there will remain at the bottom a very white ſalt.

Take this ſalt, and diſſolve it again in common water, and let it ſtand ſtill two days, that the *fæces* may ſettle; then filtre and evaporate at a gentle fire as before, then you will have a ſalt whiter than the former. Continue this proceſs of filtring, diſſolving, and evaporating it three or four times, and you'll have a ſalt whiter than the ſnow itſelf, purified from all its terreſtreity; which being mix'd with *polverine*, *rochetta*, or *ſoda*, and the requiſite doſe of *Tarſo*, or ſand being made very fine, and well ſearced, will yield a very good *frit*, and that a cryſtalline and common glaſs finer and better than that before.

TAWING is the art or manner of dreſſing skins in white; to fit them for uſe in divers manufactures, particularly gloves, *&c.* as chiefly thoſe of *lamb*, *ſheep*, *kids*, *goats*, &c.

Having clear'd the skins of wool or hair by the means of *lime*, &c. (as is deſcrib'd in the article SHAMMY) they are laid in a large vat of wood or ſtone, ſet on the ground full of water, in which *quick-lime* has been ſlak'd; in this they are let lie for a month or ſix weeks, as the weather is more or leſs hot, or as the skins are requir'd to be more or leſs ſoft and pliant.

While they are in the vat, the water and *lime* is chang'd twice, and the skins are taken out and put in again every day.

When they are taken out for the laſt time, they are laid all night to ſoak in a running water, to get out the greateſt part of the *lime*; and in the morning are laid together by ſixes one upon another, upon the wooden leg, and are ſcrap'd ſtoutly one after another, to get the fleſh off from the fleſhy ſide, with a cutting two-handed inſtrument call'd a knife, and then they cut off the legs, (if they are not cut off before) and other ſuperfluous parts about the extremes.

Then they are laid in a vat or pit with a little water; where they are well full'd with wooden peſtles for the ſpace of a quarter of an hour, and then the vat is fill'd up with water and they are rinſed in it.

In the next place they are thrown on a clean pavement to drain; and afterwards caſt into a freſh pit of water, out of which they rinſe them well; and are laid again on the wooden leg ſix at a time with the hair ſide outermoſt, over which they rub a kind of whetſtone very briskly to ſoften and fit them to recieve four or five more preparations, given them on the leg, both on the fleſh ſide and the hair ſide, with the knife, after the manner above mention'd.

After this they are put into a pit of water and wheaten bran, and ſtirr'd about in it with wooden poles, till the bran is perceiv'd to ſtick to them; and then they are left: as they riſe of themſelves to the top of the water by a kind of fermentation, they are plung'd down again to the bottom; and at the ſame time fire is ſet to the liquor, which takes as eaſily as if it were *brandy*, but goes out the moment the skins are all cover'd.

They repeat this operation as often as the skins riſe above the water; and when they have done riſing, they take them out, lay them on the wooden leg, the fleſhy ſide outwards, and paſs the knife over them to ſcrape off the bran.

Having thus clear'd them of the bran, they lay the skins in a large basket, and load them with huge ſtones to promote their draining; and when they have drain'd ſufficiently, they give them their feeding, which is perform'd after the manner following:

For 100 of large ſheep skins, and for ſmaller in proportion, they take eight pounds of *alum*, and three of ſea-ſalt, and melt the whole with water in a veſſel over the fire, pouring the diſſolution out, while yet lukewarm, into a kind of trough, in which is twenty pound of the fineſt wheat-flower, with the yolks of eight dozen of eggs; of all which is form'd a kind of a paſte, a little thicker than children's pap; which when done, is put into another veſſel to be us'd in the following manner:

They pour a quantity of hot water into the trough, in which the paſte was prepar'd, mixing two ſpoonfuls of the paſte with it; to do which they uſe a wooden ſpoon, which contains juſt as much as is requir'd for a dozen of skins: and when the whole is well diluted, two dozen of the skins are plunged into it; but they take care that the water be not too hot, which would ſpoil the paſte, and burn the skins.

After they have lain ſome time in the trough, they take them out one after another with the hand, and ſtretch them out, this they do twice; and after they have given them all their paſte, they put them into tubs, and there full them afreſh with wooden peſtles.

Then they put them into a vat, where they are ſuffered to lie for five or ſix days, or more; then they take them out in fair weather, and hang them out to dry on cords or racks, and the quicker they are dry'd the better it is; for if they be too long a drying, the ſalt and alum within them are apt to make them riſe in a grain, which is an eſſential fault in this kind of dreſſing.

When the skins are dry, they are made up into bundles, and juſt dipt in fair water, and taken out and drain'd, and being thrown into an empty tub, and after having lain ſome time, are taken out, and trampled under foot.

Then they draw them over a flat iron inſtrument, the top of which is round like a battledore, and the bottom fix'd into a wooden block, to ſtretch and open them; and having been opened, they are hung in the air upon cords to dry; and being dry, they are opened a ſecond time, by paſſing them again over the ſame inſtrument.

In the laſt place they are laid on a table, pull'd out, and laid ſmooth, and are then fit for ſale.

After the ſame manner are dreſs'd horſes, cows, calves skins, *&c.* for the ſadlers, harneſs-makers, *&c.* as alſo thoſe of dogs, wolves, bears, *&c.* except that in theſe they omit uſing the paſte, ſalt and alum water being ſufficient.

To dye Stuff a BROWN *or* TAWNY.

Put a handful of *madder* into a kettle of hot water, ſtir it very well about, and let it ſtand and ſettle a while; moiſten the ſtuff with it, then roll it up, and put it into the kettle upon the roll; and when you find that the colour does no longer fail upon it, then add to it two handfuls of *madder*, and let it cool; and when you perceive it to be boiled to a half-red colour, throw in a pail-full of the black dye into the *madder* ſuds, ſtir them together, and make a wood-fire under the kettle: for having its proper heat, it turns the better to brown; and if it be not dark enough, throw in another pail of the black lye, or more, 'till it becomes of the colour you would have it; then work the ſtuff in it very well upon, or with, the roller, to hinder it from ſpotting.

Another TAWNEY.

Firſt give the ſtuffs a *blue* ground, which muſt be either light or deep, according as you would have the *tawney*.

Then alum them, boiling them an hour in the *alum* water; let them ſtand 'till they are cold, then rinſe them out, and paſs them through the *madder* red dye, and they will turn to a light *tawney*, as light or as deep as you would have them, according as they are blued; then rinſe and cleanſe them out.

A deep TAWNEY.

Let the ſtuffs be firſt dyed a *madder* red, then take the dye off the fire, and put a quart of black dye into it for every pound of ſtuff; heat it, and put the ſtuffs into it, and work it ſo long 'till it hath taken the dye ſufficiently; then cool it, and it will be a laſting dye.

Another. Dye the ſtuffs red, then boil them in the remainder of the black dye, boiled up (after it hath been uſed) 'till they are dark enough, then cool them and rinſe them.

But if you would have the *tawney* light, take half of the black dye, and half water, and it will of conſequence be ſo much thinner and weaker.

To dye a CRIMSON TAWNEY *with cochineal.*

Alum and prepare the ſilk as for *crimſon*, then fill a clean kettle with fair water, and ſome blue wood ſuds, of each a like quantity, and then for every pound of ſilk put in one ounce of galls, one ounce and half of cochineal; and afterwards, having firſt rinſed the ſilks, put them in, ſtir them about carefully to prevent their being variegated or ſpotted; becauſe the *Provence* wood ſuds is apt to ſpot, if it be not violently ſtirr'd; let the ſilk lie one whole night in the ſuds, then rinſe it out and dry it.

Another TAWNEY.

Firſt, lay the ſilk in a ſtrong alum water for twenty-four hours, and for every pound of ſilk take one pound of good *Braſil* wood; boil it in a bag for full two hours, then take it out, and let the liquor ſtand, 'till you can juſt bear your hand in it, and afterwards put in the ſilk, and let it continue there an hour, then take it out and dry it; then boil the dye again, put it in again as before, then rinſe it very clean; then beat ſome *bole armoniac* ſmall, and mix it with beech aſhes, to be made into a lye, which ſtrain three or four times through a cloth; make it milk-warm, and then put in the ſilk; when it is deep enough dyed, rinſe it, beat it, and dry it.

A laſting deep TAWNEY.

Let the kettle be very clean, fill it with water, and to every pound of ſilk, put in one pound of *blue wood*, one pound of *galls*; boil them for an hour, then fill it up with gall-water, and while it is hot, put in and ſtir the ſilk, let it lie in 'till the next day, then rinſe and dry it.

To dye SILK *a* CRIMSON *deep* TAWNEY.

Firſt prepare the ſilks (as directed for *crimſon*) put a ſufficient quantity of liquor into a clean kettle, and for every pound of ſilk, put in one pound of *madder*, one pound of *galls*, and half a pound of *blue wood*, and boil them together with the ſilk for an hour, putting the wood into a bag to prevent its hanging in the ſilk. Let the ſilk lie a whole night in the liquor, in the morning take it out, wring it, rinſe it, and beat it well, then rinſe it again; and afterwards beat and dry it.

A ſlighter ſort of TAWNEY.

This is prepar'd after the ſame manner with the red, with this difference; for every pound of ſilk take one pound of *Braſil* wood, and two ounces of *Provence* wood, manage the ſilk as in the red, and dye it.

TAX is repreſented [in *Painting*, &c.] by a luſty young man with an oaken crown, in his right hand a pair of ſhears, a ſheep at his feet; in his left hand ears of corn, an olive-branch, and a bunch of grapes hanging down, without breeches, his arms and legs bare, the ſoles of his feet callous.

He is robuſt, becauſe taxes are the nerves of the commonwealth; the oaken crown denotes his ſtrength; the ſhears allude to the ſaying, It is the part of a good ſhepherd to ſhear the ſheep, and not to flay them; the things in his hand ſhew, that taxes are laid upon thoſe that taxes ſhould be levied upon, not for meer covetouſneſs, but for the publick weal, without any other deſign.

TEINTS and Semi-teints [in *Painting*,] are the ſeveral colours us'd in a picture, conſidered as more or leſs high, or bright or deep, or thin or weakened, or diminiſh'd, *&c.* to give the proper relievo or ſoftneſs, or diſtance, *&c.* of the ſeveral objects.

TELLUS, the goddeſs of the earth is repreſented [in *Painting*,] cloth'd in a green mantle.

TEMPERANCE is repreſented [in *Painting*, &c.] by a gentlewoman, holding a bridle in one hand, and the ſtay of a clock in the other, an elephant by her.

The bridle and ſtay denote the buſineſs of *temperance* to bridle and moderate the appetite and inordinate paſſions, as time ſerves; the elephant, becauſe it has once been accuſtomed to a certain quantity of meat, it never exceeds, but keeps ſtrictly to that, and will eat no more.

TEMPERING ſteel and iron, is a preparing them, in order to render them either more compact, hard, and firm, or more ſoft and pliant, according as the uſes of them ſhall require:

theſe metals are tempered by plunging them, while red-hot, in ſome liquor prepar'd for the purpoſe; ſometimes in pure water, as lockſmiths, *&c.* which ſeldom uſe any other.

And ſometimes a compoſition of divers juices, liquors, *&c.* is us'd; which is various according to the manner and experience of the workman, as vinegar, mouſe-ear water, the water oozing from broken glaſſes, ſoot, ſalt, oil, *&c.*

To harden and temper *Engliſh*, *Flemiſh*, and *Swediſh* ſteel, they muſt have a pretty high heat given them, and then be ſuddenly quench'd in water to make them hard: but *Spaniſh* and *Venetian* ſteel will require no more than a blood-red heat before it is quench'd.

If the ſteel be too hard or brittle for an edg'd tool, *&c.* take it down by rubbing a piece of grind-ſtone or whet-ſtone hard upon the work, to take off the black ſcurf; then brighten or heat it in the fire, and as it grows hotter, you will ſee the colour change by degrees, coming firſt to a ſtraw or light goldiſh colour, then to a darker goldiſh colour, and at laſt to a blue colour.

Chuſe ſuch of theſe colours as the work requires, then quench it ſuddenly in the water.

The light gold colour is for files, cold chiſſels, and punches to punch iron and ſteel: the dark goldiſh colour for punches to uſe on braſs, *&c.* the blue colour gives the temper for ſprings.

The tempering of files and needles is perform'd after a peculiar manner.

The antients appear to have had ſome better method of *tempering*, than any of the moderns are acquainted withal, witneſs their works in *porphyry*, a ſtone ſo hard, that none of our tools make an impreſſion upon it.

ANTONIO TEMPESTA born in the year 1555, ſcholar of *John Strada* a *Fleming*, liv'd at *Rome*, excell'd in battles and hunting-pieces, died in the year 1630, aged 75 years.

TERM } Is a kind of ſtatue or column, adorn'd at the
TERMINUS } top with the figure of a man's, woman's, or ſatyr's head as a capital, and the lower ending in a kind of ſheath or ſcabbard.

Theſe are ſuppos'd to have taken their name from the *Roman* deity *Terminus*, whom they eſteem'd as the protector of landmarks, whoſe ſtatue (made without either hands or feet, that he might not change his place) was wont to be ſet up at the bounds of lands to ſeparate them.

Theſe are alſo by ſome call'd *Thermes*, and deriv'd from *Hermes*, a name given by the *Greeks* to the god *Mercury*, who, as they believ'd, preſided over the highways; whoſe ſtatue, made in the form before-mentioned, was erected in ſeveral croſs-ways in the city of *Athens*, &c.

TERROUR, when it is exceſſive, cauſeth the eye-brow to be very much rais'd in the middle; and the muſcles, which perform the motion of theſe parts, very much marked and ſwelled, and preſſed one againſt another, being drawn down over the noſe, which will ſeem to be drawn up, as alſo the noſtrils.

The eyes ought to appear intirely open, the upper eye-lid hid under the brow; the white of the eye ought to be environed with red; the eye-ball as it were wandering, and ſituated nearer to the lower part of the eye than the upper; the lower parts of the under eye-lids ſwell'd and livid.

The muſcles of the noſe and the hands alſo ſwell'd; the muſcles of the cheeks extremely marked, and drawn into a point on each ſide of the noſtrils

The mouth muſt be very open, and the corners very apparent.

Every thing muſt be very much mark'd about the forehead and eyes; the muſcles and veins of the neck muſt be very much rais'd and apparent; the hair ſtanding up an end, the complexion pale and livid, and more eſpecially the end of the noſe, the lips, ears, and about the eyes.

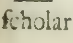
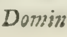
If the eyes appear extremely open in this paſſion, it is becauſe the ſoul makes uſe of them to obſerve the nature of the object, which cauſes the fright.

The eye-brow drawn down at one end, and raiſed at the other, makes it appear, that the part raiſed ſeems as if it would be join'd to the brain, to ſecure it from the ill, which the ſoul apprehends; and by the end which is drawn downwards, and appears ſwell'd, we find that in this condition the ſpirits come plentifully from the brain, as it were to cover the ſoul, and defend it from the ill which it fears.

The openneſs of the mouth indicates, that the heart is opreſs'd by the blood, which is retir'd towards it; which obliges him that is poſſeſs'd with this paſſion, when he would breathe, to make an effort, which cauſes the mouth to open wide; and which, in paſſing by the organs of the voice, makes a kind of inarticulate ſound.

Laſtly, If the muſcles and veins appear ſwell'd, and puffed up, it is by the ſpirits, which are ſent from the brain into theſe parts.

Terrour hath a great many of the motions of Horrour, but they ought to appear greater and more extended; the arms ſtretch'd out ſtrait forward, the legs in an action of flying with all their force, and all the parts of the body in diſorder.

 *or*  PETER TESTA of *Lucca*, a painter and copious engraver, born in the year 1611, ſcholar of *Dominichino*, and *Peter Cortona*, liv'd at *Rome*, ex-

cell'd in hiſtory, died in the year 1650, aged 39, uſed theſe two marks.

THAMISIS, *The* THAMES, The river has been repreſented by a captain or ſoldier lying along, holding in his right hand a ſword, and under his arm the *Auguſt* tower; in the other, a *cornucopia* of all fragrancies, with a golden chain, holding four crowns; and with this he encompaſſed the ſtreams, from under which bending of his left arm they ſeem'd to flow; his temples adorn'd with rays; the river empal'd on the one ſide, and on the other ſtood *Cæſar's Auguſta.*

THEFT is repreſented [in *Painting*, &c.] by a pale youth, clothed in a wolf's skin, his arms and legs bare, with winged feet at midnight; in one hand a purſe, a knife in the other with a pick-lock; the ears of a hare, and ſeems to be in fear.

Youth ſhews imprudence, that will not take warning; the paleneſs and hare's ears, continual ſuſpicion and fear, and therefore it loves darkneſs; the skin, becauſe the wolf lives by rapine; the barrenneſs ſhews him in diſtreſs; and the winged feet his flying from juſtice.

THEOLOGY is repreſented [in *Painting*, &c.] by a lady with two faces unlike one another, looking with the youngeſt toward heaven, with the old face towards the earth; ſits upon a globe full of ſtars, her right hand on her breaſt, her left toward the earth, holding up her train, a wheel by it.

The wheel denotes divinity not touching the earth, but by its circumference, ſo ſhould a divine keep himſelf unſpotted from the world; ſitting upon a globe ſhews, that divinity repoſes in no inferior thing; her hands, gravity; the skirt of her garment ſhews, that ſome part of divinity extends to low things, tho' neceſſary.

THEORY is repreſented [in *Painting*, &c.] by a young woman looking upward, her hands claſp'd together, a pair of compaſſes on her head, nobly clad in purple, ſeeming to deſcend the ſtairs.

The colour of her garment ſhews, that the sky terminates our ſight; her face, that the intellect is taken up in celeſtial things; the ſtairs, that things intelligible have order, proceeding by degrees from things near, to things afar off; the compaſſes are the moſt proper inſtrument for meaſuring, which perpetuate the name of an author.

THETIS, a ſea-goddeſs, is repreſented [in *Painting*, &c.] as a lady of a brown complexion, her hair diſhevelled, adorn'd with a coronet of periwinkle and eſcallop ſhells, clad in a mantle of a ſea-green colour, adorn'd with bracelets of amber about her neck and arms, and holding in her hand a branch of coral.

PELLEGRINO TIFALDI *call'd otherwiſe* PELLEGRINO *de* BOLOGNA, born in the year 1522, ſcholar of *Dan. da Volterra*, liv'd at *Bologna*, *Rome*, *Milan*, excell'd in hiſtory and architecture, died in the year 1592, aged 70 years.

TIGRIS, a river of , is repreſented in the form of an old man, and by his ſide a tyger.

The beaſt as well denotes its firſt ſtreams, as the number of tygers which are there.

HENRY TILSON was an *Engliſh* face-painter of good note, born in *London*; after he had been inſtructed for ſome time by Sir *Peter Lely* in the nature of face-painting, he travell'd for *Italy*, where he ſtaid ſix or ſeven years, and during that time, he copied, with wonderful care and exactneſs, a great number of pictures of the beſt maſters; by which means, at his return to *England*, he became not a little famous in the portrait way.

He had alſo a particular genius for crayons, in which he performed admirably well, after the pictures of *Correggio*, *Titian* and the *Caracci*, while he was at *Rome*. He died at thirty-ſix years of age, and lies buried in *St. Clement*'s.

TIMBER-WORK.

The manner of colouring all manner of *timber-work*, as wainſcot, doors, windows, poſts, rails, pales, gates, border-boards for gardens, *&c.* which require either beauty or preſervation from the violence of rain, or injury of weather, is as follows:

Suppoſe there be a ſet of palliſades, or a pair of gates, or ſome poſts and rails to be painted in a ſtone colour;

Firſt, Look over the work, and take notice whether the joints be open in the gates, or whether there be any large clefts in the poſts; for if theſe are not ſecur'd, the wet will inſinuate itſelf into thoſe defects, and make the quicker diſpatch in rotting the whole work.

Therefore the firſt thing to be done, is to ſtop up thoſe clefts, *&c.* ſmooth and even, with a ſubſtance which painters call *putty*, which is made of whiting and linſeed oil, well beaten together on a grinding-ſtone, or with a wooden mallet, to the conſiſtence of a very thick dough; and with this, let all the crannies, clefts, and other defects, be well fill'd up, ſo that it may be equal to the ſurface or outſide of the things to be painted.

Then prime the work with *Spaniſh* brown well-ground, and mix'd very thin with linſeed-oil; with this do over the work, giving it as much oil as it will drink up; this in about two days will be indifferent dry. Then if you would do the work ſubſtantially, do it again with the ſame priming colour; when it is thorow dry, take white lead, well-ground and tempered with linſeed-oil, but not too thin; for the ſtiffer you work it, if it be not too ſtiff, the better body will be laid on, and the longer it will laſt: rub this colour on well with a large briſtle bruſh, that the whole ſurface of the work be ſo intirely covered, that no crack nor corner may remain bare; which may be eaſily done, by jobbing in the point of a briſtle bruſh.

Let this firſt colouring dry, and then go over it a ſecond time; and if you pleaſe, a third alſo; the charge will be but little more, but the advantage will be great in the duration.

This courſe is ſufficient for every kind of *timber-work*, which requires only a plain colour, whether you cover the work with a ſtone colour, or elſe with a timber colour with umber and white, or a lead colour with indigo and white.

Some lay over their work only a coat of *Spaniſh* brown, by tempering it up more ſtiff than was done for the two firſt primings; which, in ſome reſpects, is the cheapeſt way of all, and preſerves the timber perhaps as well as any.

Note, If when you have made uſe of your colours, there be occaſion for a ſmall ceſſation, 'till the work be finiſh'd; in this caſe, you muſt cover the colour that remains in the pot with water, which will prevent its drying and skinning over.

And the pencils alſo, or bruſhes, ſhould be waſh'd out in clear linſeed-oil, and then in warm ſoap-ſuds; for if either oil, or colours, be once dried in the bruſh, or pencil, they are ſpoil'd for ever.

It has been obſerv'd, that *timber* laid over with white, when it has ſtood ſome time in the weather, the colour will crack and ſhrink up together, juſt as pitch does, if laid on any thing that ſtands in the ſun. The cauſe of this is, that the colour was laid on with too ſtiff a body; for being wrought too thick once, it will dry with a skin on the outſide, which will keep the inſide moiſt, and prevent its binding firm, from whence thoſe cracks proceed.

Of Out-door painting in general. Doors, ſhop-windows, window-frames, pediments, architraves, friezes, corniches, and all other *timber*-works, that are expos'd to the weather, ought at firſt ſetting up to be prim'd with *Spaniſh* brown, *Spaniſh* white, and red-lead (about a fifth) to cauſe the other two colours to dry.

Theſe being well-ground with *linſeed-oil*, will make a very good primer; then afterwards with the ſame colour (but whiter) for a ſecond primer; and laſtly, with a fair white made of white lead, and about a fifth part in quantity (not in weight) of *Spaniſh* white.

Now he that is able to bring the work thus far on, has proceeded to the higheſt pitch of that vulgar painting, that aims at preſervation beyond beauty, tho' ſomething of beauty is neceſſarily included in this alſo. But this is not all, for he that is arriv'd thus far, is in a fair way to other perfections in the art of painting; but for the pannelling of wainſcot with its proper ſhadows, and for imitating olive and walnut-wood, marbles, and ſuch like, theſe muſt be attain'd to by ocular inſpection, it being impoſſible to deliver the manner of the operation by precept, without example: and I am bold to affirm, that a man ſhall gain more knowledge by one day's experience, than by an hundred ſpent to acquire it ſome other way.

I adviſe therefore all thoſe, that deſire an inſight into the buſineſs, to be a little curious, if opportunity offers, in obſerving the manner of a painter's working, not only in grinding his colours, but alſo in laying them on, and working in them; in all theſe obſerving the motion of his hand in the manage of any kind of tool: and by this means, with a little imitation, join'd to the directions here given, I doubt not, but in a ſhort time, you may arrive to great proficiency in the buſineſs of vulgar painting.

Take notice, that if you ſhall at any time have occaſion to uſe either bruſhes that are very ſmall, or pencils, as in many caſes there will be occaſion; you ought then to diſpoſe of the colours you uſe upon a pallet (*which is a wooden inſtrument, eaſy to be had at any colour-ſhop*) and there work and temper them about with your pencil, that the pencil may carry away the more colour: for you are to *Note*, that if a pencil be only dipt in a pot of colour, it brings out no more with it than what hangs on the outſide, and that will work but a little way; whereas, if you rub the pencil about in the colour, on the pallet, a good quantity of colour will be taken up in the body of the pencil; and beſides all this, you may work your pencils better to a point on a pallet, than you can do in a pot; the point of a pencil being of greateſt uſe in divers caſes, eſpecially in drawing of lines.

TIME is drawn ſtanding upon an old ruin, winged, and with iron teeth. Or thus; as an old man clothed in a garment of ſtars, having upon his head a garland of roſes, ears of corn, and dry ſticks, ſtanding upon the *zodiack*, holding a looking-glaſs in his hand, and having two children at his feet, the one fat, and the other lean, both writing in one book; upon the head of one is the ſun, and upon the other the moon.

It is alſo repreſented by an old man, bald behind, winged, with a ſcythe and an hour-glaſs, having a lock of hair on his forehead, but bald behind.

TIN is a whitiſh metal ſofter than ſilver, yet much harder than lead.

Several, both chymiſts and others, account *tin* an imperfect metal, generated of two different ſeeds, viz. that of ſilver and that of lead, which renders it a kind of compound of both; and accordingly it is frequently found in both lead and ſilver mines.

But, however, *tin* has its proper mines, of which our counties of *Cornwal* and *Devonſhire* are a ſufficient proof; the greateſt part of the *tin* conſum'd in *Europe*, being got out of them.

The principal characters, or properties of *tin*, as they are enumerated by M. *Boerhaave*, are, that it is the lighteſt of all metals, very little ductile or elaſtic; the moſt fuſible and volatile of all metals, ſcarce diſſolvable by acids, unleſs by thoſe of the weaker ſorts; and eaſily and intimately miſcible with other metals, the ductility of which becomes diminiſh'd by ſuch a mixture.

The ſame author concludes, that ſulphur is a prevailing ingredient in *tin*, and deduces ſeveral of its properties therefrom. He likewiſe adds, that could the metal be purg'd of this heterogeneous ſulphur, 'tis probable it would be found no other than ſilver.

Several authors have taken notice of a great conformity of TIN *and* LEAD in divers particulars between the two metals. And Mr. *Boyle*, and others, have given us ſeveral inſtances of ſilver being actually procur'd in a conſiderable quantity from *tin*-ore.

Yet ſome naturaliſts have thought, that there is a greater analogy between *tin* and *lead*; and will have it, that *tin* is only lead under a leſs degree of coction; but if there be ſome marks of agreement betwixt them, there are as many of diſagreement.

The method of getting, preparing, &c. TIN *in the* Corniſh *mines*.

The working of the *tin* mines is very hard and difficult; not only by reaſon of the great depth, which the veins deſcend to, even as low as fifty fathom; but alſo becauſe the rocks, through which paſſages are frequently to be cut, are often ſo hard, that the workman can't dig a foot in a week.

Nor is the ſoft ſhaking earth found in *tin*-mines, much leſs inconvenient to the workmen; both by reaſon of fœtid, malignant vapours it exhales, and of the currents of water often met with therein: all theſe diſadvantages together render it impracticable for the workmen to hold it above four hours together.

The mineral ſtones, or glebe, being dug and drawn out of the mine, is there broke to pieces with large iron mallets; then brought to a ſtamping-mill, where it is pounded ſmaller with ſtampers, like thoſe of paper-mills; and the water paſſing through it, waſhes away the earthy parts, leaving the metallic ones behind. This lotion, or waſhing, is repeated twice to make the better ſeparation.

When this has been done, they dry it in a furnace on iron-plates, and afterwards grind it very fine in a craſing mill; then they waſh it again, and then dry it: and in this ſtate the metallic matter is call'd *block* or *black tin*.

To convert it into *tin*, i. e. into *white tin*, they carry it to a furnace or blowing-houſe; where by means of a charcoal fire, kept up with huge bellows, work'd with water, it is melted. After it has paſs'd all theſe preparations, and is grown cold, they forge it, which is the laſt thing done to it in the works.

The droſs, or *ſcoria*, being ſcumm'd off, and the *tin* in fuſion, and being melted down with freſh ore, runs into metal, and even the cauſalty, *i. e.* the matter waſh'd and ſeparated from the metal in the mill, being thrown up in heaps, after reſting ſix or ſeven years, they fetch it over again, and it yields as good *tin* as any of that in *Germany*.

The workmen diſtinguiſh ſeveral kinds of *tin*, as moor *tin*, which is the beſt ſort, a foot of which weighs eighty pounds; and *mine tin*, which is the next, a foot of which weighs fifty-two or fifty pounds. The *tin* got from the ſoft gravelly earth, they call *pryan tin*, to diſtinguiſh it from that got from the ſtones, which is better by almoſt half.

Two pounds of *black tin*, when melted, make about one of *white*.

By the analyſis made of this metal, they hold it compounded of *earth*, *ſulphur*, a *metallick ſalt*, and *mercury*.

The method of aſſaying TIN.

To find whether *tin* be ſoft and ductile, or harſh and brittle, there are two kind of aſſays: the firſt is by putting the *tin* into a hot braſs mould, and there melting it.

If the metal be harſh, it will be heavier when it comes out than when it went in, otherwiſe it will be lighter.

The ſecond is, by caſting the melted *tin* into a little mould made of thunderſtone.

This mould has a little canal of a moderate length, which conducts the matter into a cavity, capable of containing half a billiard ball; if the *tin* be harſh, it will appear whitiſh towards the entry of the mould, otherwiſe 'tis tinged ſuperficially of a very faint blueiſh brown.

To colour TIN *or* COPPER *of a* GOLD *colour.*

Set *linſeed-oil* on the fire, ſcum it well, and put in *amber* and *hepatic aloes*, of each a like quantity; ſtir them well together 'till it grows thick; then take it off, cover it cloſe, and ſet it in the earth for three days: when you uſe it, ſtrike the metal all over with it with a pencil-bruſh, let it dry, and it will be of a golden colour.

To take away the ringing and ſoftneſs of TIN.

Melt the *tin*, and caſt in ſome *quickſilver*, remove it from the fire, and put it in a glaſs retort, with a large round belly, and a very long neck; heat it red-hot in the fire, 'till the *mercury* ſublimes, and the *tin* remains at the bottom: do this three or four times.

The ſame may be done by calcining it three or four times, by which means it will ſooner be red-hot than melt.

To take away the ſoftneſs and creaking noiſe of TIN.

You may effect this by granulating it often, and then reducing it again, and quenching it often in *vinegar*, and a *lixivium* of *ſalt of tartar:* the *creaking* noiſe is taken away, by melting it ſeven or eight ſeveral times, and quenching it in boy's *urine*, or elſe oil of walnuts.

To take away the deaf ſound of TIN.

Diſſolve it in *aqua-fortis* over a gentle fire, 'till the water fly away; doing thus ſo long, 'till it is all turn'd to a *calx*, which being mix'd with *calx* of ſilver, and reduc'd, performs the work.

To prevent TIN *from cracking.*

Take ſalt and honey, of each a like quantity, and mix them, melt the *tin*, and put it twelve or more times into it, then ſtrain out the *tin*, and it will purge and leave cracking; put it into a crucible, lute it, and calcine it twenty-four hours, and it will be like calx of gold.

To make a kind of counterfeit ſilver of TIN.

Mingle *ſilver* with *tin*, melted with *quickſilver*, keeping it a long time in the fire; then being brittle, it is made tough by keeping it in a gentle fire, or under hot embers, in a crucible, for about twenty-four hours.

TIN-GLASS, a mineral matter, white, ſmooth, and as to appearance reſembling *tin*; but hard, ſharp, brittle, and diſpos'd into ſhining ſcales, as it were pieces of glaſſes, whence it took its name. It is the ſame that is call'd *biſmuth*.

TINNING is the covering or lining any thing with melted *tin*, or with *tin* reduc'd to a very fine leaf.

Sauce-pans, and other kitchen utenſils, are tinned with melted *tin*; and locks, bits, ſpurs, *&c.* with leaf-*tin*, by the help of fire.

Looking-glaſſes are foliated or tinn'd with thin ſheets of beaten *tin*; the whole bigneſs of the glaſs, apply'd and united to it by means of *quickſilver*.

Plumbers uſe to tin or whiten their ſheets of lead; in order to which, they have a *tinning* furnace, fill'd with live coal, at the two ſides of which two men are plac'd, who hold up the ſheets over the fire to heat; and the *tin*-leaves being laid over them, as faſt as the ſheets grow hot, and the *tin* melts, they fix it on by rubbing and ſtretching it with tow and roſin.

GIACOMO ROBUSTI *call'd* TINTORETTO, born in the year 1512, ſcholar of *Titian*, ſtudied *Michael Angelo* for deſign, liv'd at *Venice*, excell'd in hiſtory and portraits, died in 1594, aged 82 years.

TOPAZ, a precious ſtone, eſteem'd of the third order after the diamond. It is of a beautiful yellow, or gold colour, tranſparent, very hard, and takes a fine poliſh.

It is found in *Bohemia*, ſeveral parts of the *Indies*, *Ethiopia*, *Arabia*, and *Peru*, and is the true chryſolite of the ancients.

Thoſe of *Bohemia* are yellow and a little blackiſh, are the ſofteſt of all, their poliſh the coarſeſt.

Thoſe of *Peru* are ſofter than the oriental ones, but their colour is much the ſame; the colour of the oriental ones border upon the orange, and they are the moſt eſteem'd; thoſe of *Madagaſcar* were formerly valued, but are now accounted good for little.

The *topaz* is eaſily counterfeited, and there may be counterfeit ones made, which to the eye will not come behind the natural ones.

To make an oriental Topaz.

It will be needleſs here to repeat the quality of the *topaz*, ſince we have done it already in this book; ſo we ſhall content ourſelves, to ſhew the manner of imitating it with our paſte, compoſed of natural cryſtal and *Saturnus glorificatus*, whereof take ten ounces; of very good *orpiment* one ounce, reduced to fine powder: after having mixed them well together, put them into a crucible, covered with another, which lute and dry well; then put it into a glaſs-houſe furnace for three hours, and then let it cool gently in the annealing furnace. Having taken your matter out of your crucible, you may cut and poliſh it as you pleaſe, and you'll have a very fine oriental *topaz*.

To make a paſte for an oriental Topaz.

The *topaz* of the ancients is the ſame, which the moderns call a chryſolite; and their chryſolite, that which modern jewellers call a *topaz*, which is a ſtone of a golden colour. Such are the oriental *topaz's*, which are the moſt hard of all ſtones next the diamond; their colour is like water tinged with ſaffron or rhubarb, but ſhining and pure.

There are ſome found in *Europe*, but as ſoft as cryſtal, and approach ſomewhat on black with a golden colour; if there is any found of the colour of pure gold, it is extraordinary; and not diſtinguiſhable from the oriental ones but in hardneſs.

To imitate the oriental ones, take two ounces of natural cryſtal, ſeven ounces of red-lead in fine powder, and ſearced, mix the whole well together, put them into a good crucible, wherein you leave an empty ſpace of about an inch deep, for fear the matter ſhould run over in baking, or ſtick to the colour of the crucible in riſing, and ſpoil the work.

Then proceed, obſerving the ſame circumſtances of time and fire, and you'll have an admirable *topaz* colour.

Another fine Topaz.

Take two ounces of natural *cryſtal* prepared, two ounces of native *cinnabar*, two ounces of *æs uſtum*, the whole powdered, four times as much calcined tin alſo pulverized, put the whole in a crucible, well covered and luted, into a furnace as before; wherein let them ſtand twenty-four or thirty hours, at a fire not too violent, and which ſhall always retain the ſame degree of heat, for this powder will eaſily melt, then you'll have a fine *topaz* coloured paſte.

A very fine *topaz* colour may be made, by putting to four ounces of the ſame natural *cryſtal*, half a drachm of *crocus Martis*, and a very little *minium*, obſerving the ſame circumſtances for baking it as before.

TOREUMATOGRAPHY, a term of art deriv'd from the *Greek*, and us'd to ſignify the knowledge, or rather the deſcription of ancient ſculptures and *baſſo-relievo's*.

TOREUTICE a *Greek* term, us'd to ſignify that part of ſculpture, commonly call'd *Turning*.

TORTOISE-SHELL is the ſpoils or cover of a teſtaceous animal, us'd in inlaying, and various other uſes, as ſnuff-boxes, combs, and other utenſils.

There are two kind of *tortoiſes*, viz. *land* and *ſea-tortoiſes*.

The *ſea-tortoiſe* again is of four kinds, *viz.* the *freſh tortoiſe*, the *caret*, the *cahohanna*, and the *lager-hu*: but 'tis the *caret* alone, that furniſhes that beautiful ſhell ſo much admired in *Europe*.

The ſhell of the *caret* is thick, and conſiſts of two parts; the upper, which covers the back; and the lower the belly: the two are joined together at the ſides by ſtrong ligaments, but yet allow of a little motion.

In the fore-part is an aperture for the head and legs, and behind for the hind legs and tail.

It is the under-ſhell alone is us'd: to ſeparate it from the upper, they make a little fire beneath it, and as ſoon as ever 'tis warm, the under ſhell becomes eaſily ſeparable from the upper with the point of a knife, and is taken off in *lamina*, or leaves, without killing the animal, which 'tis ſaid, being turn'd to ſea again, gets a new ſhell.

The whole ſpoils of the *caret* conſiſts in thirteen leaves, eight of them flat, and five a little bent; of the flat ones, there are four large ones, about a foot long, and ſeven inches broad.

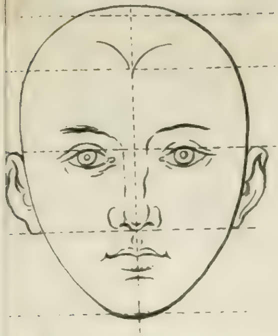
The beſt ſhell is thick, clear, tranſparent, of the colour of *antimony*, ſprinkled with brown and white.

When it is us'd in marquetry, or inlaid work, workmen give it what colour they pleaſe, by means of coloured leaves of metal, which they put underneath them.

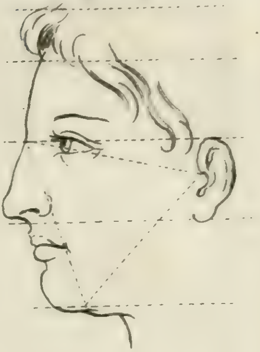
On

Vol. II. Plate XXI

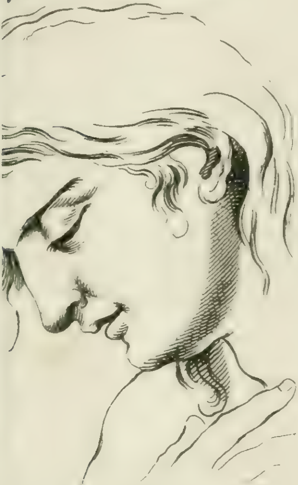
Tranquility.



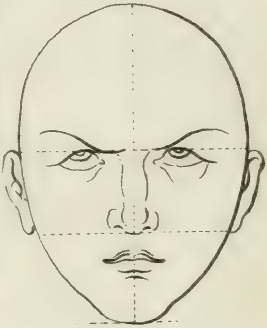
Tranquility.



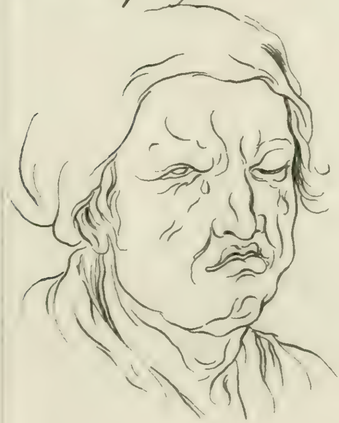
rofound veneration.



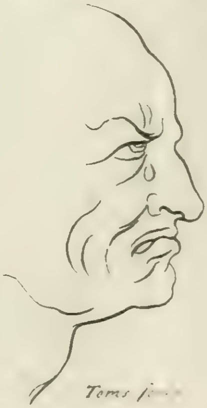
Veneration.



Weeping

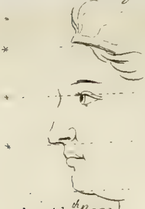


Weeping



Toms ſc.

Tranquility.



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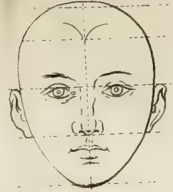

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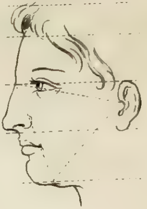
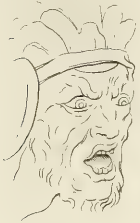
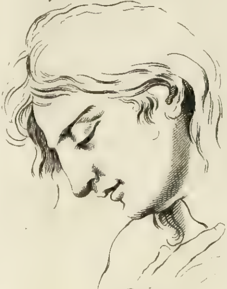


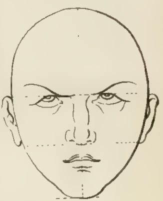
Anger mixt wth Rage.



Profound veneration.



Veneration.



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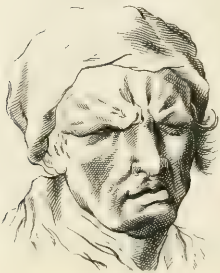

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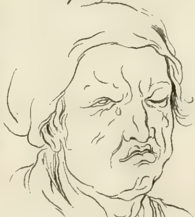
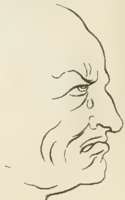


Weeping



Toms f.

On the ſhore of *Braſil* there are ſaid to be *tortoiſes* ſo large, as ſometimes to dine eighty men.

And that in the *Indian* ſea, the ſhells ſerve the natives for boats. *De Laet* relates, that in the iſland *Cuba*, they are of ſuch a bulk, that they will creep along with five men on their back.

To counterfeit TORTOISE-SHELL.

In order to perform this well, let the wood you intend to work on be very cloſe grained, clean and ſmooth wrought off, as pear-tree or the like; but if it be rough grained, it muſt have a ground of ſize and whiting, as is done in rough *japanning* for coarſe-grain'd woods, ruſh it ſmooth, and go over it with *ſeed-lac* varniſh, the breadth of a ſilver leaf, which take up with cotton, and lay on it moiſt as cloſe as may be; then waſh again, and lay on another leaf of ſilver, and ſo continue to do, 'till you have laid the wood all over with ſilver, and when it is dry, ſweep off all the looſe ſilver with a hair-bruſh. Then grind *Cologn earth* very fine, and mix it with *gum-water* and *common ſize*; and with this having added more *ſize*, or *gum-water* than it was ground withal, ſpot or cloud the ground-work, having a fine true natural ſhell by you to imitate; and when this is done, you will perceive ſeveral reds, lighter and darker, appear on the edges of the black, and many times lie in ſtreaks, on the tranſparent part of the ſhell. To imitate this finely, grind *Sanguis Draconis* with gum-water, and with a fine pencil draw thoſe warm reds, fluſhing it in about the dark places more thick, but fainter and thinner, and with leſs colour, towards the lighter parts, ſo ſweetening it, that it may in a manner loſe the red, being ſunk in the ſilver or more tranſparent parts.

When it is done and dry'd, give it at leaſt ſix waſhes of *ſeed-lac* varniſh; and twenty-four hours after, ruſh it gently; and when it is ſmooth, and fit for the ſecond operation, grind *gambooge* very fine, and put it into as much *ſeed-lac* varniſh, as will waſh it ſix times more, and let it ſtand twelve hours, and give it the third varniſhing; and with the laſt mixture waſh it ſo often, that the ſilver is chang'd to a golden colour, and the work is finiſhed.

TRACING is repreſented [in *Painting*, &c.] by a woman, her head winged, her garment ſpread all over with ants, holding up her right arm; and with her fore-finger, with which ſhe points at a crane; and with her other fore-finger, a hound full ſcent after his game.

The wings denote elevation of intellect, the ants always ſearching out what is moſt convenient for their livelihood; the crane, an inquiſitive man, that would inveſtigate ſublime things at a diſtance.

TRAGACANTH } A kind of gum, oozing out at inciſions,
ADRACANTH } made in the trunk and larger branches of a plant, or little ſhrub of the ſame name.

Mr. *Tournefort* tells us, the naked hillocks of mount *Ida* in *Candia* produce a deal of the plant *Tragacantha*, which gives the gum ſpontaneouſly towards the end of *June*, and in the following months; when the nutritious juice of the plant, thickened by the heat, burſts moſt of the veſſels it is contain'd in.

This juice coagulates in threads, which make their way into the pores of the bark; where being puſh'd forwards by new juice, they get through the bark, and are at length hardened in the air, either into little lumps, or into twiſted pieces, in form of little worms, longer or ſhorter, according to the matter of which they are form'd.

This plant grows alſo in ſeveral places of the *Levant*, particularly about *Aleppo*.

The gum is of different colours and qualities; ſome being white, others greyiſh; ſome red, and ſome almoſt black: but the white is the beſt.

It ſhould be choſen clear, ſmooth, and twiſted, like little worms.

TRAGEDY is repreſented [in *Painting*, &c.] by a gentlewoman all in mourning, a bloody dagger in her right hand, by her on the ground a garment of cloth of gold, and divers precious jewels, ſhe being ſhod with *cothurni*.

The mourning ſuits beſt with *tragedy*, containing nothing but the ruin of princes by violent death, which is demonſtrated by the bloody dagger; the *cothurni*, or ſocks, were worn by princes, to diſtinguiſh them from peaſants; they ſhew that *tragedy* requires gravity and conception, neither mean nor trivial.

TRANSPARENCY is a quality in certain bodies, whereby they give paſſage to the rays of light.

The *tranſparency* of natural bodies, as glaſs, water, air, *&c.* is by ſome imputed to the great number and ſize of the pores and interſtices between the particles of thoſe bodies.

But this account is very defective, for the moſt ſolid and opake body in nature we know, contains a great many more pores than it does matter; a great deal more ſize than is neceſſary for the paſſage of ſo infinitely fine and ſubtile a body as light.

Ariſtotle, *Des Cartes*, &c. place *tranſparency* in the rectitude or ſtraitneſs of the pores; by means of which, ſay they, the rays are enabled to make their way through, without ſtriking againſt the ſolid parts, and being reflected back again.

But Sir *Iſaac Newton* ſhews this account to be lame; the quantity of pores in all bodies being ſufficient to tranſmit all the rays that fall on them, howſoever thoſe pores be ſituated with reſpect to each other.

The cauſe then, why all bodies are not tranſparent, muſt not be aſcrib'd to their wanting rectilineal pores, but either to the unequal denſity of the parts, or to the pores being fill'd with ſome foreign matter, or their being empty; by means of which, the rays in paſſing through, undergoing a great variety of reflections and refractions, are perpetually diverted this way; and that, 'till at length falling on ſome of the ſolid parts of the body, they are extinguiſh'd and abſorbed.

Thus cork, paper, wood, *&c.* are opake, whereas *glaſs*, *diamonds*, &c. are tranſparent; the reaſon is, that in the neighbourhood of parts, equal in denſity, ſuch as thoſe of *glaſs*, *water*, *diamond*, &c. are with reſpect to each other; the attraction being equal on every ſide, no reflection nor refraction enſues; but the rays, which entered the firſt ſurface of the bodies, proceed without interruption quite through the body; thoſe few only excepted, which chance to meet with the ſolid parts.

But in the neighbourhood of parts, which differ much in denſity, ſuch as the parts of wood and paper are both in reſpect of themſelves, or the air, or the empty ſpace in their pores; as the attraction will be very unequal, the reflections and refractions muſt be very great; and therefore the rays will not be able to make their way through ſuch bodies, but will be perpetually deflected, and at laſt quite ſtopp'd.

To make the form of a FIR-TREE *appear in Colophonia.*

Diſtil *turpentine* in a retort *gradatim*: when all is diſtill'd off, keep the retort ſtill in a reaſonable heat, that what humidity is ſtill remaining may be evaporated and become dry.

Then take it off from the fire, and hold your hand to the bottom of the retort, and the *turpentine*, which is dried (call'd *colophonia* or roſin) will crack aſunder in ſeveral places; and in thoſe cracks, or chaps, you ſhall ſee the perfect figure of *fir-trees*, which will continue there many months.

To make the SILVER-TREE *of the Philoſophers.*

Take *aqua-fortis* four ounces, fine ſilver one ounce, which diſſolve in it; then take *aqua-fortis* two ounces, in which diſſolve *quickſilver*: mix theſe two liquors together in a clear glaſs, with a pint of pure water; ſtop the glaſs cloſe, and after a day you will perceive a tree to grow by little and little, which is wonderful and pleaſant to behold.

To make the GOLDEN-TREE *of the Philoſophers.*

Take oil of ſand, or flints, and oil of *tartar per deliquium.* of each a like quantity, mix them well together; then diſſolve *ſol* (gold) in *aqua-regia*, and evaporate the *menſtruum*; dry the *calx* by the fire, but make it not too hot, for then it will loſe its growing quality; break it into little bits, but not reduce it into powder, which bits put into the aforeſaid liquor, a finger's breadth one from another, in a very clear glaſs; keep the liquor from the air, and let the calx ſtand ſtill, and the bits of calx will preſently begin to grow: firſt they will ſwell, then put forth one or two ſtems, then divers branches and twigs, ſo exactly, that you cannot but wonder to ſee. The author affirms, that this growing is not imaginary, but real.

To make the STEEL-TREE *of the Philoſophers.*

Diſſolve ſteel in rectified ſpirit, or oil of ſalt, ſo ſhall you have a green and ſweet ſolution, ſmelling like *brimſtone*; filtre it, and abſtract all the moiſture with a gentle heat, and there will diſtil over a liquor as ſweet as rain-water, (for ſteel, by reaſon of its dryneſs, detains the corroſiveneſs of the ſpirit of ſalt, which remains at the bottom, like a blood-red maſs, and it is as hot on the tongue as fire:) diſſolve this blood-red maſs in oil of flints, or ſand, and you will ſee it grow up in two or three hours like a tree with ſtem and branches.

This author ſays, if you prove this tree at the teſt, it will yield good gold, which it draws from the oil of ſand or flints; the ſaid oil being full of a pure golden ſulphur.

To make OIL *of* FLINTS *or* SAND.

Take of the moſt pure *ſalt of tartar* in fine powder, twenty ounces; ſmall ſand, flints, pebbles, or cryſtals in fine powder, five ounces, mix them; put as much of this as will fill an egg-ſhell into a crucible; ſet it in a furnace, and make it red-hot, and preſently there will come over a thick and white ſpirit. Take out the crucible while it is hot; and that which is in it, like tranſparent glaſs, keep from the air; afterwards reduce it to powder, and lay it in a moiſt place, and it will diſſolve into a thick fat oil, which is the oil of flints, ſand, pebbles, or cryſtal.

This oil, ſays the author, precipitates metals, and makes the calx there more heavy than oil of tartar doth; it is of a golden nature, and extracts colours from all minerals; it is fixed in all fires, maketh fine cryſtals and borax, and maturates imperfect metals into gold.

TRIPOLI, TRIPOLY, Call'd alſo *alana*; a kind of chalk, or white ſoft ſtone, bordering a little on red, us'd by *lapidaries*, *goldſmiths*, *copper-ſmiths*, *glaſs-grinders*, &c. in poliſhing their works.

Some imagine *tripoli* to be a common ſtone, burnt and calcin'd by the ſulphureous exhalations, which happen to be under the mines where it is found.

Of theſe mines there are a number in divers parts of *Europe*, particularly in *Italy*, where the *tripoli* is very good. Others take it to be a native earth.

TRITON, a poetical ſea demi-god, held by the ancients to be an officer or trumpeter to *Neptune*, attending on him, and carrying his orders and commands from ſea to ſea.

The poets and painters repreſent him as half man, half fiſh, terminating in a dolphin's tail, and holding in one hand a ſea-ſhell, which ſerves him for a trumpet.

But tho' mythologiſts ſpeak only of one *Triton*, yet the poets have imagin'd ſeveral; giving ſome of them for trumpeters to all the ſea-gods, particularly to *Neptune* and *Venus*.

Indeed the *Tritons* not only officiated as trumpeters in *Neptune*'s retinue, but were alſo ſuppos'd to draw his chariot, *i. e.* the ſea-ſhell, in which he is feign'd to ride over the waters.

It is not much to be doubted, but that the fable of the *Tritons* took its riſe from ſea, or mer-men; for that there are ſuch things as ſea-men, is ſcarce to be doubted, after what has been ſaid under the article MERMAID.

The poets uſually attribute to *Triton* the office of calming the waves, and making tempeſts ceaſe; as *Ovid* in his Metamorphoſes.

TRUCE is repreſented [in *Painting*, &c.] by a woman in the middle of an iſland in the calm ſea, ſitting upon a bundle of arms; ſhe has a breaſt-plate like *Bellona*, a helmet on her right knee; graſps a rod, about which is twiſted a wolf-fiſh and a mullet united, holding in her left a dog and a cat in a cord, ſitting peaceably.

Her place denotes *truce* is like the calm ſea, which does not laſt; always ſitting upon arms tied together, that in time of *truce* hoſtilities are laid aſide; the breaſt-plate, that in time of *truce* the care of war is in the people's breaſts; the fiſh ſhew, that tho' they be mortal enemies, yet at a certain time they uſually meet together; the dog and cat ſhew the ſame.

TRUTH, ſaith *Hippocrates*, was fram'd in the ſimilitude and likeneſs of a beautiful woman, attired with gravity and modeſty.

Philoſtratus tells us, that ſhe remain'd in the cave of *Amphiaraus*, of a beautiful countenance, clothed all in white garments.

Lucianus ſays, that her ſtatue was made in the form of a young woman, habited in rags and baſe attire, with a ſuperſcription over her head, how ſhe was wrong'd and abus'd by fortune.

The TUBEROSE *to paint*.

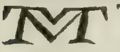
Lay on *white*, and ſhade with *black*, and a little *biſtre* in ſome places, and mix a little *carmine* for the outſide of the leaves, to give them a reddiſh teint, particularly towards the ends.

Do the ſeed with *maſticote*, and ſhade it with bladder-green

Colour the green of the leaves and ſtalks with *verditer*, and ſhade them with *iris-green*.

TUITION is repreſented [in *Painting*, &c.] by a woman in a red garment, a book of accompts under a balance in her right hand, with the motto *Computa*; in the left, the skirt of her robe, wherewith ſhe ſeems to cover the nakedneſs of a child ſleeping at her feet, over which is a lizard; a cock on the other ſide.

The balance and book ſhew, that a tutor is oblig'd to give a juſt account of his pupil's eſtate; the red denotes love and charity; the cock, vigilance, requiſite to the faithful diſcharging of his duty; the covering, care; and the lizard watches over men, when they lie careleſly aſleep.



THEODORE VAN TULDEN, an engraver of all kind of ſubjects, us'd this mark.

TULIPS [*to paint in miniature.*] There being a great number of ſorts of *tulips*, I ſhall omit many of them, eſpecially the plain ones, which may be done by the directions elſewhere given, for the making of particular colours, and only touch upon thoſe call'd ſtriped or ſtreaked *tulips*.

Theſe ſtripes, or ſtreaks, are laid in with *carmine*, very thin in ſome places, and very deep in others; and are to be finiſh'd with fine ſtrokes of the ſame colour, which muſt all obſerve the turn of the ſtripes.

As for others, you may begin with *vermilion*, and proceed by mixing it with *carmine*, and finiſh with *carmine* only.

For others, lay *Indian-ink* upon *vermilion* inſtead of *carmine*.

Some again you may colour with *lake* and *carmine* mix'd together; and *lake* only, or with white, to begin with.

Thoſe that are of a *violet purple* colour are to be done with *ultramarine* and *carmine*, or *lake*, ſometimes *bluer*, and ſometimes *redder*.

The manner of doing both is juſt the ſame, there is no difference, but in the colours.

A *blue* made of *ultramarine* and *white*, and ſometimes a tranſparent *purple* is to be put in certain places; as for example, between the ſtripes of *vermilion*, *carmine*, or *lake*, which muſt be finiſh'd with fine hair-ſtrokes like the reſt, and ſcumbled into the ſtripes.

Thoſe *tulips*, that have fallow *teints*, are made of *lake*, *biſtre*, and *oaker*, according as they happen to be; but theſe are only for fine or uncommon *tulips*.

Shade ſuch, whoſe ſtripes are *carmine*, with *indigo*.

As for thoſe, whoſe ſtripes are colour'd with *lake*, uſe *black* and *white*, ſometimes mixing *biſtre* with it, at other times *green*.

Shade ſome with *gambooge* and *umber*, and always with fine hair ſtrokes, which follow the turn of the leaf.

Thoſe *tulips*, which are call'd edged, are all of one colour, except the border, which is white and purple.

RED with *yellow.*
YELLOW with *red.*
And RED with *white.*

Lay the *purple tulip* of this bordered ſort with *ultramarine*, *carmine*, and white, and ſhade and finiſh with the ſame.

You muſt not touch the border, that is, you muſt only lay on a thin *white*, and ſhade it with a very thin *indigo*.

Colour *yellow tulips* with *gambooge*, and ſhade them with the ſame *oaker*, *umber*, or *biſtre*. Do the edging with *vermilion*, and finiſh with a very little *carmine*.

Red tulips are laid with *vermilion*, and finiſh'd with the ſame colour, with a little *carmine* or *lake* added to it. Do the border with *gambooge*, and finiſh it; add *gall-ſtone*, *umber*, or *biſtre* to the ſame.

White tulips muſt be ſhaded with *black*, *blue*, and *white*; and *Indian ink* is very properin this caſe, for it ſhades ſoft, as it is of itſelf equal to the effects of *blue* and *white*, mix'd with other *black*. Edge theſe with *carmine*.

There is in all theſe ſorts of *tulips* a nervure in the middle of the leaves, which muſt be made much brighter than the reſt, and the edges muſt be ſcumbled into the grounds by fine ſtrokes; for they muſt not ſeem cut or ſeparated from the reſt.

There are ſtill others of different colours; and ſuch as are, as it were, *black* on the inſide, are to be coloured and finiſh'd with *indigo*, as well as the ſeed.

If the *tulips* have a *yellow* ground, uſe *gambooge*; and to finiſh them, add a little *umbre* or *biſtre*.

The leaves and ſtalks of *tulips* are commonly painted with a *ſea-green*, and ſhaded and finiſh'd with an *iris-green*, with broad ſtrokes along the leaves.

Some again may be colour'd with *verditer*, mix'd with *maſticote*; theſe you may ſhade with *bladder-green*, that they may have a more yelloviſh caſt.

TURCOISE }
TURQUOIS } Is a precious ſtone of a blue colour, ordinarily opake, but ſometimes a little tranſparent.

There are of theſe ſeveral kinds, *oriental* and *occidental*; of the *new rock* and of the *old*.

The *oriental Turcoiſe* partakes more of the blue tincture than the green; and the *occidental* more of the green than the blue.

Thoſe of the *old rock* are of a deep blue, and thoſe of the *new rock* more whitiſh, and don't keep their colour.

The *oriental* ones come from *Perſia*, the *Indies*, and ſome parts of *Turkey*; and ſome even ſuppoſe, 'tis thence they take the modern name of *Turquoiſes*.

The *occidental* are found in various parts of *Europe*, particularly *Germany*, *Bohemia*, *Sileſia*, *Spain*, and *France*.

Turcoiſes all grow of a round or oval figure; they cut eaſily, and ſeals are frequently engraven on them.

The *Turquois* is eaſily counterfeited, and that ſo perfectly, that 'tis impoſſible to diſcover the deceit without taking it out of the collet.

In the *Memoirs of the Academy of Sciences*, we have a very curious account of the formation of the *Turcois*, the manner of giving it the blue colour, *&c.* by M. *Reaumur*.

He obſerves, that the *Turquois* is one of the ſofteſt of precious ſtones, its hardneſs ſcarce exceeding that of a cryſtal, or a tranſparent pebble; though ſome are much harder than others, and ſtill the harder, *cæteris paribus*, the more valuable, by reaſon of the vivacity of the poliſh, which is always proportionable to the hardneſs.

Roſnel a jeweller, eſtimating the ſeveral precious ſtones, ſets a hard *Turquoiſe*, whoſe *blue* is neither bright nor deep, on the foot of the moſt perfect *emeralds*, that is, on a level with a diamond. Thoſe that have any defect he only values at a *French* crown a caract.

Tavernier affirms, that there are but two mines of *Turquoiſes* known in all the earth, and thoſe both in *Perſia*; the one call'd the *old rock*, near a town call'd *Neaburg*, three day's journey to the north-eaſt of *Meched*; the other, call'd the *new rock*, is five day's journey.

He ſays the *new rock* is but little valued, and the king of *Perſia* has for many years prohibited the digging in the *old rock* for any but himſelf. And M. *Reaumur* ſuppoſes the *old rock* to be now exhauſted.

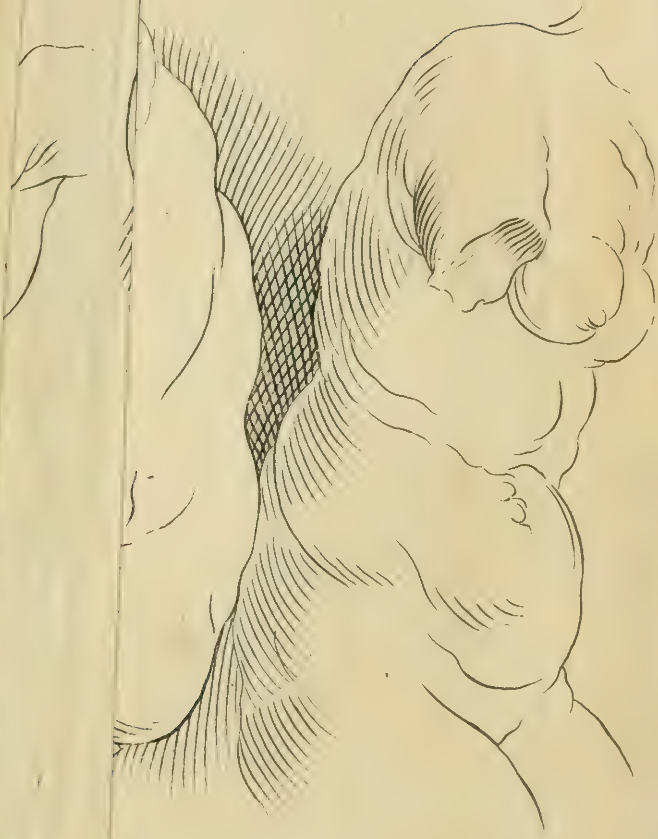
In reality, the common diviſion of *Turcoiſes* into thoſe of the *old rock* or *oriental*, and *new rock* or *occidental*, is very arbitrary and precarious.

All the beſt and moſt perfect, wherever they grow, either in *India* or *Europe*, are reckoned among the former, and the reſt among the latter.

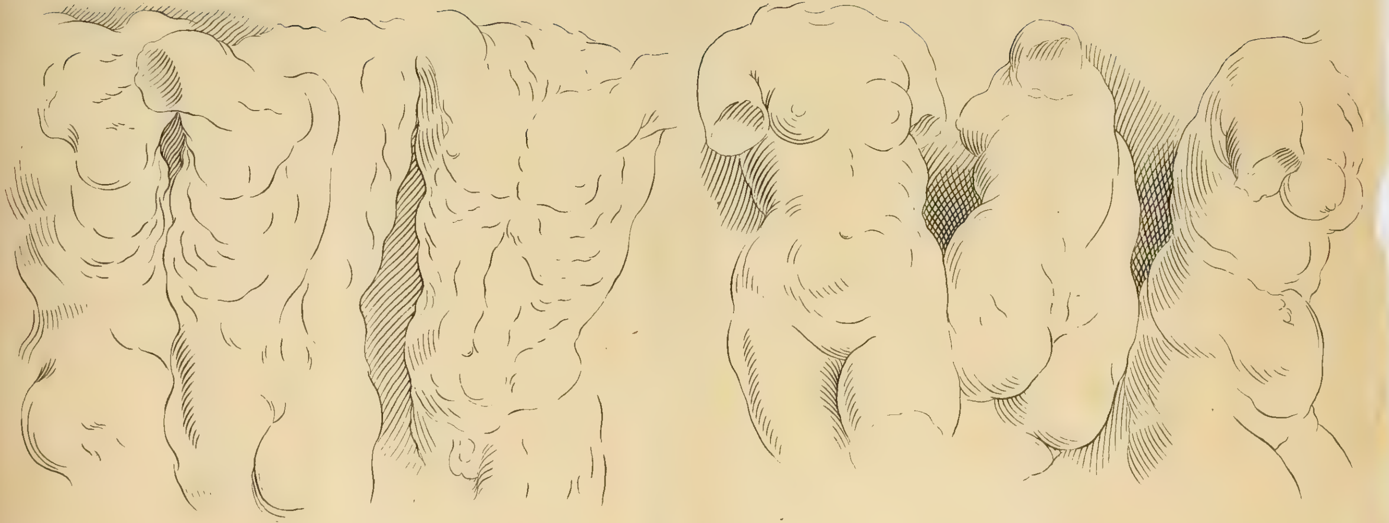
There are ſeveral conſiderable mines of *Turquoiſes* near *Simore* in lower *Languedoc*; but that fine *blue* colour admir'd in the *Turquoiſes* is not natural to theſe rocks; the prevailing colour being ſometimes white, and ſometimes much like that of *Tripoli* and *Venice*.

The other precious ſtones are dug out of the mine with all their colour, to the force whereof nothing can be added, tho' it may frequently be diminiſhed; as we ſee fire bring down the too deep colour of the *ſapphire*, and take that of a pale *ſapphire* quite away.

Vol. II. Plate XXII.



Vol. II. Plate XXII.



Theſe *Turquoiſes*, on the contrary, are naturally whitiſh, or yellowiſh, of a colour as common as that of a free-ſtone; and by oppoſing them for ſome time to the action of the fire, they aſſume a blue colour.

Tho' it ſeems a *paradox*, yet M. *Reaumur* has made it exceeding probable, that *Turquoiſes* are originally the bones of animals.

In the mines of *France*, pieces have ſeveral times been found in the figure of teeth, bones of the arms, legs, &c.

And *Turquoiſes*, which are yet imperfect or ill-form'd, are apparently compos'd of *laminæ*, or leaves, like thoſe of bones, between which ſome petrifying juice inſinuating itſelf, binds them cloſe together; and ſtill the ſofter and more imperfect the ſtones are, the more diſtinguiſhable are the different directions of the fibres and *laminæ* with their interſections; and the greater reſemblance they bear to fractured bones, and the leſs to any kind of ſtones known.

To give them the blue colour, they dry them a while in the air, and afterwards heat them gradually in a furnace, made after a particular manner.

If they are heated too haſtily, the humidity between the *laminæ*, wanting time to evaporate all, will ſeparate into ſcales or flaws.

Some of the ſtones require a greater degree of heat to bring them to their colour than others; and even in large pieces, ſeveral parts ordinarily require ſeveral degrees of heat.

For this reaſon, a great deal of care is to be taken in the heating them; for the fire, which gives them their blue by degrees, if they be expos'd beyond a certain degree, takes it away again.

M. *Reaumur* does very well account for their taking a blue colour by heat: it ſeems, that when they are freſh cut out of the rock, that their ſubſtance is found, ſprinkled, and ſtreak'd all over with ſpots, veins, little circles, &c. of a *black-blue* colour.

Theſe he ſuppoſes to be remains of a deep *bluiſh* matter, which the fire ſpreads by rarefying them, and diffuſes throughout the whole ſubſtance of the ſtone.

He alſo concludes, that this matter has been either originally the juice contain'd in the bones, ſince mixed and coagulated with the petrifying juice, or ſome other mineral matter inſinuated into the pores of the ſtone.

The great defect of all *Turquoiſes* is, that in time they loſe their *blue* colour, and become *green*, and then ceaſe to be of any value.

The ancients attributed a kind of ſympathetick virtue to the *Turquoiſe*.

It is commonly ſuppos'd, that it changes colour, or breaks at the death, ſickneſs, or even misfortune of the perſon who wears it; that it is diſagreeable to married people, and even breaks on their fingers; that it marks all the changes and accidents that happen in the body of the wearers, by anſwerable changes in its colour; and for this reaſon the ladies have left off wearing it.

De Boot endeavours to account for all theſe effects from natural, and even probable cauſes.

The way to make Turcoiſe.

The name of *Turcoiſe*, which this precious ſtone bears, comes from the place where it is found, *viz.* in *Turkey*; altho' this ſtone comes alſo from *Perſia* and the *Eaſt-Indies*, where it is found in abundance, the colour whereof approaches nearer to blue than green, which alſo diſtinguiſhes them from thoſe that come out of the weſt, which are more green and whitiſh.

They call the firſt by the name of the ſtone of the *old rock*, and the other by that of the *new*.

The *Turcoiſe* is the fineſt and nobleſt of all the opake precious ſtones: its colour is compoſed of green, white, and blue, and imitates that of verdigreaſe.

Take ten ounces of natural *cryſtal* prepared, and *Saturnus glorificatus*; half an ounce of purified *verdigreaſe*, and one ounce of our prepared *zaffer*, the whole in fine powder; which mix well together in a crucible covered, with another well-luted and dried, which afterwards put into a glaſs-houſe furnace, where leave it for three hours; then twelve hours in the annealing furnace, that it may cool gently; then take out your crucible, and break it, and take out the matter, and cut and poliſh it, and you'll have *Turcoiſe*-coloured ſtones like thoſe of the *old rock*.

The way of making Turcoiſe-blue, *a particular colour in this art.*

For this colour take a pot-full of cryſtal-frit tinged with an *aqua-marine* colour, or blue, whereof we have given ſeveral preparations, which colour muſt be fair and full, for all depends on that: it being well-melted, put into it, little by little, ſea-ſalt decrepitated white, and reduced to powder, mixing it well and ſoftly, as we have noted in ſpeaking of other metalline colours; and the blue, from clear and tranſparent, will become thick: for the ſalt penetrating the glaſs, takes away its tranſparency, and cauſes a paleneſs; hence alone comes the *Turcoiſe*-colour uſed in glaſs. When the colour is right to the workman's fancy, it muſt be preſently wrought, for the ſalt will evaporate, and make the glaſs tranſparent and diſagreeable; if in working this metal the colour fades or goes off, you muſt add a little more of the ſame decrepitated ſalt, as before, and the colour will return.

We will here advertiſe the workman, that he muſt take care, that this ſalt be well decrepitated, otherwiſe it will always crackle and be apt to fly in his eyes, and endanger his ſight; you muſt (as I have ſaid) put in the ſalt in intervals, 'till the colour pleaſes you.

It will ſuffice for this uſe, that the frit tinged *aqua-marine*, or blue, be made of one half cryſtal-metal, and the other of *rochetta*, and the colour will be very fair and good.

TURMERICK is a root us'd by dyers to give a yellow colour. This root is yellow both within and without ſide, very hard, as if petrified, and not unlike either in figure or ſize to ginger. The leaves it produces are like thoſe of black *hellebore*; its flowers riſe in manner of a *ſpica*, or ear, and its fruit is rough like new cheſnuts.

It comes chiefly from the *Eaſt-Indies*; though it grows alſo in the iſland of *Madagaſcar*.

It ſhould be choſen large, reſinous, hard to break, and heavy.

Some perſons have miſtakenly imagined there was a native *red turmerick*; their error was owing to this, that the *yellow* root, as it grows old, turns brown, and when pulveriz'd, reddiſh.

It is much us'd by glovers, *&c.* to dye their gloves; as alſo by founders, *&c.* to give a gold colour to their metals.

The *Indians* uſe it to colour their rice and other foods yellow; for which reaſon, it is by ſome call'd *Engliſh* ſaffron.

Our dyers don't find it gives ſo ſteady a yellow as the *luteola* or greening weed; but it is admirable for brightening and heightening the red colours dyed with *cochineal*, or *vermilion*, as ſcarlets, *&c.*

TURNING is a branch of ſculpture, being the art of faſhioning hard bodies, as wood, ivory, braſs, *&c.* into round or oval forms in a lathe.

Turning is perform'd by putting the ſubſtance to be turned upon two points as an axis; and moving it round, or about on that axis; while an edg'd tool, ſet ready to the outſide of the ſubſtance in a circumvolution of it, cuts off all the parts that lie further off from the axis; and makes the outſide of that ſubſtance concentrick to the axis.

The principal inſtruments us'd in *Turning*, beſide the lathe, are chiſſels and mandrils of various forms.

The invention of *Turning* ſeems to be very ancient. Some indeed, to do honour to the age, will have it, that it has been brought to perfection by the *moderns*; but if what *Pliny*, and ſome other ancient authors relate, be true, that the *ancients* turn'd thoſe precious vaſes, enrich'd with figures and ornaments in relievo, which are ſtill to be ſeen in the cabinets of the curious; it muſt be own'd, that all has been added in theſe ages, makes but a poor amends for what we have loſt of the manner of *turning* of the ancients.

TURPENTINE is a tranſparent gum or reſin, which flows either naturally or by inciſion, from ſeveral fatty, reſinous trees, ſuch as *terebinthus*, larch, pine, fir, *&c.*

There are ſeveral ſorts of *turpentine*; as that of *Chio*, that of *Venice*, that of *Bourdeaux*, that of *Cyprus*, *Strasburg*, &c.

The *turpentine* of *Chio*, which is the only genuine kind; and that which gives the name to all the reſt, is a *whitiſh* reſin, bordering a little on the *green*, very clear, and ſomething odoriferous; it is drawn by inciſion from a tree call'd *terebinthus*, which grows plentifully in that iſland, as alſo in *Cyprus*, and ſome parts of *France* and *Spain.*

The gum ought to be choſen of a ſolid conſiſtence, almoſt without either taſte or ſmell, and not at all tenacious, which diſtinguiſhes it from the falſe *turpentine* of *Venice*, which is commonly ſubſtituted in its place, having both a ſtrong ſmell and a bitter taſte, and is very ſticking or clammy.

This *turpentine* of *Chio* is undoubtedly the beſt for many uſes; but the ſcarcity of it is the cauſe, that it is but little in uſe.

The *Venice turpentine* is falſly ſo call'd; for tho' there was a *turpentine* antiently brought from *Venice*, yet that, which is now ſo call'd, comes from *Dauphine* in *France.*

It is liquid, of the conſiſtence of a thick ſyrup, and whitiſh; and flows either ſpontaneouſly, or by inciſion, from *larches*, *firs*, and *pines*, chiefly in the wood *de Pilatze.*

That which flows naturally is call'd by the inhabitants *Bijon*, and is a kind of balm, not inferior in virtue to that of *Peru*, and is frequently ſubſtituted to it.

That which is drawn by inciſion, after the tree has left off yielding ſpontaneouſly, is of very conſiderable uſe in ſeveral arts, and is that of which varniſh is made.

This is to be choſen white and tranſparent, and great caution is to be us'd that it has not been counterfeited with oil of *turpentine.*

The *turpentine* of *Bourdeaux* is white and thick as honey. It does not ooze from the tree in the form in which it is brought to us; but is properly a compoſition, wherein among other ingredients, is a white hard ſort of reſin, call'd *galipot.*

The *turpentine* of *Strasburg*, *Dantzick*, &c. is what is moſt commonly us'd among us, and preferr'd to that of *Venice*; from which it is diſtinguiſhed by its *green* hue.

Oil of TURPENTINE.

There are two ſorts of this oil drawn from *turpentine* by diſtillation; the firſt is *white*, and the ſecond *red*, both eſteem'd as balſams: but theſe are both little us'd by us, and ſcarce to be had.

What is commonly ſold under the name of *oil of turpentine*, is only a diſtillation of the reſin call'd *galipot*, freſh from the tree. This is us'd by painters, *&c.*

To be good, it ſhould be clear and white as water, of a ſtrong penetrating ſmell, and very inflammable,

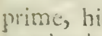
TUTTY is a kind of metallick ſoot, thrown off from braſs in the furnace, and form'd into concave flakes of different ſizes and thickneſſes; very hard, greyiſh, and full of little protuberant grains, about the bigneſs of pins heads.

It is found adhering to rolls of earth, hung up for that purpoſe over the furnaces of founders in braſs, to receive the fumes of the melted metal.

V.

PERINO DEL VAGA, born in 1500, ſtudied *Michael Angelo* and *Rafaelle*, liv'd at *Genoa*, *Piſa*, *Rome*, excell'd in hiſtory and architecture, died in 1547, aged 47 years.

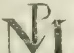
VAL. ſtands for *Valeſio*, *John Lewis Valeſio* of *Bologna*.



O LEWIS VALESIO of *Bologna*, painter and engraver. His mark was alſo VAL.

VALOUR is repreſented [in *Painting*, &c.] by a man in his prime, his garment of cloth of gold, a ſceptre in his right hand, a garland of laurel; and with his left ſtroking a lion on the head.

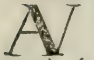
His virility, or man's eſtate, denotes the ſupport of valour and bravery; the ſcepter, that pre-eminence is due to it; the laurel, his ever being in the ſame humour; the lion, the property of couragious men to get love of the moſt barbarous by their courteſy.

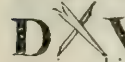


J. VAN VELDE us'd this mark: and near the mark we read *Olyn* on landſkips engraven by him.

WILLIAM VANDER-VELDE, commonly call'd *the Old*, was an extraordinary ſhip-painter of *Amſterdam*; coming over to *England*, he was much employed by king *Charles* II. for whom he painted ſeveral of the ſea-fights between the *Dutch* and *Engliſh*. He alſo underſtood navigation extraordinary well, and is ſaid to have conducted the *Engliſh* fleet to the burning of *Schelling*. He was the father of a maſter, whom no age excell'd in ſhip-painting; and this we owe to the father's inſtructions, who was an admirable draughtſman of all maritime objects. He lived at *Greenwich* to be more converſant in theſe things, which were his continual ſtudy; and in which king *Charles* II. and king *James* II. gave him all poſſible encouragement, making him their painter with a conſiderable ſalary, which afterwards was continued to his ſon. The father in his latter days commonly drew in black and white, on a ground prepared on canvaſs; to which, like paper, he gave an eaſy freedom to his ſails and tackle; as alſo to every part of a ſhip due proportion with infinite neatneſs: for his better information in this way of painting, he had a model of the maſts and tackle of a ſhip always before him to that nicety and exactneſs, that nothing was wanting in it, nor nothing unproportionable. This model was in the hands of his ſon *Olo Vander-Velde*, who died in *London* about forty years ago.

VAN RHIN *in.* ſtands for *Rembrant de Rein.*


ANDREAS VANDE-VENNE *pinxit* V. V. *Delft*, ſc. *Willielmus Delft ſculpſit.*


DIRICH-VANDER-STAREN liv'd in the year 1500. He mark'd his plates with the month and year in which they were engraven; as in that of the flood, and another where the Virgin is aloft, and *St. Bernard* at her feet, mark'd 3d of *October* 1524, and the other mark'd 1544. He likewiſe us'd the letter D, in which was a V.

VANITY is repreſented [in *Painting*, &c.] by a young girl, ſplendidly adorned, of a jovial countenance, painted, carries upon her head a diſh with a heart in it.

Vanity is that which propoſes no end to its actions, and therefore to be richly clothed and painted as done to pleaſe others, for no other end but to enjoy a ſhort pleaſure, is a ſign of *vanity*; it likewiſe diſcovers its heart and thoughts, having no end in its eye, and therefore the heart is viſible over her head.

Cavalier FRANCESCO VANNI, born in the year 1563, ſcholar of his godfather *Arcangelo Sallimbeni Fed. Zucchero*, and afterwards imitated *Barocci*, liv'd at *Siena*, excell'd in hiſtory and religious ſubjects, died in the year 1610, aged 47 years.

HERMAN VARELST was elder brother of the famous *Simon Varelſt*; he painted hiſtory, fruit, and flowers, after a manner very pleaſant and well-coloured. He educated ſeveral ſons and one daughter in the ſame way of drawing. He ſtudied ſome time at *Rome*, and reſided in the emperor's court at *Vienna*, which city he left upon the *Turks* coming before it in 1683. He died at *London* 40 years ago, and lies buried in *St. Andrew's Holborn.*

VARNISH } is a thick, viſcid, ſhining liquor, uſed by *paint-*
VERNISH } *ers*, *gilders*, and various other artificers, to give a gloſs and luſtre to their works; as alſo to defend them from the weather, duſt, *&c.*

There are ſeveral kinds of *varniſhes* in uſe; as the ſiccative or drying *varniſh*, made of oil of *aſpin*, *turpentine* and *ſandarach* melted together.

White *varniſh*, call'd alſo *Venetian varniſh*, made of oil of *turpentine*, fine *turpentine* and *maſtic.*

Spirit of wine *varniſh*, made of *ſandarach*, *white amber*, *gum elemi* and *maſtick*; ſerving to gild leather, picture-frames, *&c.* withal.

Gilt *varniſh*, made of *linſeed oil*, *ſandarach*, *aloes*, *gum gutta* and litharge of *gold*.

China varniſh, made of *gum lacca*, *colophony*, *maſtic*, and *ſpirit of wine*.

Common *varniſh*, which is only common *turpentine*, diſſolv'd in oil of *turpentine*.

To chooſe Spirits. To make *varniſh*, you muſt have ſpirit of *wine*, which muſt be ſtrong, or elſe it will ſpoil the *varniſh*, and not diſſolve the gums; the ſtronger the ſpirits are, the better will the *varniſh* prove. To try the ſpirits, put ſome into a ſpoon that has *gunpowder* in it, ſet fire to it as you do to *brandy*, and if it burns ſo long as to fire the *gunpowder*, 'tis fit for uſe.

To chooſe Seed-Lack. The beſt is that which is large grain'd, bright and clear, freeſt from ſticks and droſs.

Gum Sandarach. The beſt is the largeſt grain'd and whiteſt, let it be as clear from duſt as poſſible.

Gum Animæ. The whiteſt, cleareſt, and moſt tranſparent, is the beſt.

Venice Turpentine. The cleareſt, fineſt and whiteſt is the beſt.

Of Roſin. There are two ſorts, the white ſort ſhould be very white and clear. Of the common ſort, the beſt is clarified and tranſparent.

Gum Copal. The beſt is the whiteſt, as free from droſs as you can get it. It is a thick whitiſh heavy *gum*, ſeldom without droſs.

Gum Elemi. The beſt is the hardeſt, whiteſt, and cleareſt from droſs; it is brought over commonly in the bark of a tree.

Gum Benjamin. The beſt is that of a bright reddiſh colour, like clarify'd *roſin*.

Iſinglaſs. The beſt is the cleareſt and whiteſt.

Gum Maſtick. The beſt is the whiteſt, largeſt grain'd, clear and free from droſs.

The *Dutch* ruſhes and *Tripoly*, are to be had at the *iron-mongers*. The bruſhes and common *ſize*, always ready made at the *colour-ſhops*.

WHITE VARNISH } From a manuſcript of Mr. *Boyle*.
AMBER VARNISH } Take white *roſin* four drachms, melt it over the fire in a clean glaz'd pipkin, then put into it two ounces of the whiteſt *amber* you can get (finely powder'd.) This is to be put in by a little and a little, gradually, keeping it ſtirring all the while with a ſmall ſtick, over a gentle fire, till it diſſolves, pouring in now and then a little oil of *turpentine*, as you find it growing ſtiff; and continue ſo to do till all your *amber* is melted.

But great care muſt be taken not to ſet the houſe on fire, for the very Vapours of the oil of *turpentine* will take fire by heat only; but if it ſhall happen ſo to do, immediately put a flat board or wet blanket over the fiery pot, and by keeping the air from it, you will put it out, or ſuffocate it.

Therefore it will be beſt to melt the *roſin*, in a glaſs of a cylindrick figure, in a bed of hot ſand, after the glaſs has been well anneal'd or warm'd by degrees in the ſand, under which you muſt keep a gentle fire.

When the *varniſh* has been thus made, pour it into a coarſe linnen bag, and preſs it between two hot boards of oak or flat plates of iron; after which it may be uſed with any colours in painting, and alſo for *varniſhing* them over when painted.

But for covering gold, you muſt uſe the following *varniſh:* this is to be obſerv'd, that when you have *varniſh'd* with white *varniſh*, you may put the things *varniſh'd* into a declining oven, which will harden the *varniſh*.

A hard Varniſh, *which will bear the muffle (from a manuſcript of Mr.* Boyle*'s) for laying over any metal, that appears like gold, to prevent it from turning black, which all but gold will be apt to do, when expos'd to the air.*

Take of *colophony*, which is to be had at the *Druggiſts*, an ounce; ſet it over the fire in a well-glaz'd earthen veſſel, till it is melted; then by little and little, ſtrew in two ounces of powder of *amber*, keeping ſtirring it all the while with a ſtick; and when you perceive it begin to harden or reſiſt the ſtick, then put in a little *turpentine* oil, which will thin and ſoften it immediately; then put in two ounces of *gum copal* (finely powder'd) ſprinkling it in as you did the *amber*, ever and anon pouring in a little oil of *turpentine*; and when it is done, ſtrain it as before directed.

This is proper to *varniſh* over gold, and the things done with it, muſt be ſet into a declining oven, three or four days ſucceſſively, and then it will reſiſt even the fire.

A Varniſh *for braſs, to make it look like gold.*

This is uſed upon leaf-gold, or upon that which is call'd *Dutch* or *German* leaf-gold, or upon braſs or bath-metal, which are deſign'd to imitate gold.

Take two quarts of ſpirit of wine, and put it into a retort glaſs; then add to it an ounce of *gambooge*, two ounces of *lake*, and two ounces of *gum maſtic*; ſet this in a ſand-heat for ſix days, or elſe near a fire, or you may put the body of the retort frequently into warm water, and ſhake it two or three times a day; then ſet it over a pan of warm ſmall-coal duſt. Before you lay this *varniſh* over the metal, to be ſure you ſee that it has been well clean'd, *varniſh* it over thinly with this *varniſh*, and it will appear of the colour of gold. Set it in a declining oven to harden, and it will not rub off.

N. B. This is a good *varniſh* to mix with any colours that incline to red, and the white *varniſh* for mixing with thoſe that are pale.

A Varniſh *for wood, paper,* &c.

The *Japaneſe* have a method of making plates, bowls, and other veſſels of brown paper, and ſometimes of fine ſaw-duſt; which veſſels are very light, and very ſtrong, which by reaſon they are not liable to be broken by a fall as *China* ware or *porcelaine* made of earth, are much eſteem'd with us. The method of making them is as follows.

Take brown paper, boil it in common water, ſtirring and maſhing it all the while with a ſtick, till it is almoſt become a paſte; then take it out and pound it well in a ſtone mortar, till it is reduc'd to a ſoft pappy conſiſtence, like rags for paper-making; then with common water and *gum arabic*, a quantity ſufficient to cover this paper-paſte an inch, put theſe together in a well-glaz'd pipkin, and boil them well, keeping continually ſtirring them, till the paſte is well impregnated with the *gum*: then is your paſte fit for making any form you deſign.

Having the mould ready made, as ſuppoſe any thing of the figure of a plate, you muſt have hard wood turn'd on one ſide of ſuch a figure, with a hole or two in the middle, quite through the wood, to let any water paſs through that is preſs'd out of the paſte; which mould muſt be concave, and in the middle in the form of the underſide of a plate, alſo another piece of hard wood muſt alſo be turn'd convex in the middle, and in the form of the upperſide of a plate; this muſt be about the eighth part of an inch leſs than the under mould: but about the rim or the edge, you may, if you pleaſe, have ſome little ornament carv'd or engraven in the wood.

Theſe moulds muſt be well oil'd on the turn'd ſides, as ſoon as they are made, and muſt be continued oiling, till they have been thoroughly drench'd with oil; and oil them well again juſt before you uſe them, to prevent the gumm'd paſte from ſticking to the wood. Set the under mould upon a ſtrong table even, and ſpread it over with ſome of your paſte as evenly as you poſſibly can, ſo as to be every where of an even thickneſs of about a quarter of an inch; then having oil'd the upper mould, and put it as exactly as may be on the paſte, preſs it hard down, ſetting a great weight upon it; letting it remain in that ſtate for twenty-four hours.

When you ſuppoſe the paſte to be dry, take it out of the moulds; and when it is thoroughly dry, it will be as hard as wood, and be fit to lay a ground upon, made with ſtrong ſize and lamp-black, letting it dry gently; and when that is thoroughly dry, mix ivory-black with the following *varniſh*, and uſe it as hereafter directed.

A ſtrong Japan Varniſh.

Take an ounce of colophony, and melt it in a well-glaz'd earthen veſſel; then having three ounces of amber finely pulveriz'd and ſifted, put it in by little and little, adding now and then ſome ſpirit of turpentine. When it is thoroughly melted, ſprinkle in three ounces of ſarcocolla, keeping it all the while ſtirring, putting in frequently more ſpirit of turpentine, till all is melted, and well incorporated; then ſtrain it through a coarſe hair bag, plac'd between two hot boards, and preſs it gently, receiving the clear into a well-glaz'd pot, made warm. With this varniſh mix the ground ivory-black, and having firſt warm'd the veſſel made in the mould, whatſoever form it is, plate, bowl, *&c.* lay it on before the fire in a warm room, that the air may not chill the *varniſh:* lay it on equally, and then ſet it into a gentle oven; and the next day into a hotter, and the third day into one that is very hot, letting it ſtand in it till the oven is quite cold, and then it will be fit for any uſe, either for liquors cold or hot, and will never change, nor can be broken but with great difficulty.

As for the moulds, it is probable they might do as well if they were caſt of any hard metal, as if turn'd of wood.

You may alſo make what things you pleaſe of fine ſaw-duſt, by drying it well, and pouring on it ſome turpentine; having an equal quantity of roſin melted with it, and half the quantity of bees-wax, mix them well together, and put them to the dry ſaw-duſt, ſtirring all together till the mixture becomes thick as a paſte; then take it off the fire, and having warm'd your moulds, ſpread ſome of the mixture on the under mould, that has a hole in the middle, as equally as poſſible, and preſs the upper mould upon it, as before; let it ſtand to cool, and your veſſel will be fit for painting.

There may, if you pleaſe, be ſome ſarcocolla finely powder'd, put into this while your turpentine is melting, to the quantity of half the turpentine; ſtirring it well, and it will harden it: this *varniſh* will moſt ſafely be made in the open air, becauſe it will endanger the houſe, and have a wet cloth ready to put it out, if it takes fire.

But which-ever of the mixtures you uſe, if you have a mind to have them appear like gold, do them over with gold ſize, and when that begins to ſtick a little on the finger, lay on leaf-gold, either real gold, or that which is brought from *Germany*; but the laſt is apt to change green, as moſt of the preparations from braſs will do. Such as thoſe which are call'd bath-metal, and others of the like ſort, which appear like gold, when they are freſh poliſh'd, or clean'd every day; but as the air coming upon them will make them alter to another colour, gold itſelf is rather to be choſen, which is durable, and will never change, and is alſo a much finer colour than any of the former for a continuance.

And altho' the leaf-gold is tender, and may be ſuppoſed to be liable to rub off, yet the *varniſh*, with which it is to be *varniſh'd* over, will keep it bright and intire.

When the leaf-gold has been laid on, and the flying pieces bruſh'd off, which is not to be done till the gold ſize is dry; then *varniſh* it over with the following *varniſh*.

Varniſh *for gold, or ſuch leaf of metals that imitate gold.*

Take colophony, and having melted it, put in two ounces of amber finely powder'd, and ſome ſpirit of turpentine, and as the amber thickens, keep it well ſtirring; then put in an ounce of gum elemi, well pulveriz'd, and more ſpirit of turpentine, conſtantly ſtirring the liquor till all is well mix'd and incorporated: but take care however to uſe as little turpentine as you can; becauſe the thicker the *varniſh* is made, the harder it will be. Let this be done over a ſand-heat, in an open glaſs, then ſtrain it, as is directed for the preceding *varniſh*. This *varniſh* is to be uſed alone; firſt warming the veſſels made of paper-paſte, and lay it on with a painting bruſh before the fire, but not too near, leſt the fire raiſe it into bliſters. After this has been done, harden it three ſeveral times in ovens; firſt with a ſlack heat, the next with a warmer, and the third with a very hot one; and the veſſels will look like poliſh'd gold.

And as for ſuch veſſels, *&c.* as ſhall be made with ſaw-duſt and gums; the *varniſh* may be made of the ſame ingredients as above-mention'd, except the gum elemi; and this will dry in the *Sun*, or in a gentle warmth.

To varniſh *of a red colour.*

After what you would *varniſh* has been prepar'd as before, and is thoroughly dry, mix vermilion with the third *varniſh*, and uſe it warm; then ſtove it, or harden it by degrees in an oven; and it will appear very gloſſy, or elſe lay on your firſt ground with ſize and vermilion, and in proper places you may ſtick on with gum arabick, and water ſome figures cut out of prints, as little ſprigs of flowers, or ſuch like; and when they are dry, paint them over with gold ſize, and let that remain till it is a little ſticky to the touch; then lay on your gold, and let that be well clos'd to the gold ſize, and dried. *See the article* GILDING. Then if you would ſhade any part of your flower, take ſome ox-gall, and with a fine Camel's-hair pencil, trace over the ſhady parts on the leaf-gold, and with deep *Dutch* pink; and when that is dry, uſe your *varniſh* in a warm place

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(I mean that *varniſh* directed for the covering of gold) and ſet it to harden by degrees in an oven, which *varniſh* will ſecure the leaf-gold; altho' it be only that call'd *Dutch* gold, or metal, from changing by keeping the air from it.

Varniſhing *any thing which is covered with leaf-ſilver.*

Firſt paint the things over with ſize, and ground chalk or whiting; let them ſtand 'till they are thoroughly dry, and then do them over with very good gold ſize, of a bright colour: (for there is much difference in the colour of it; ſome being yellow, and others almoſt white; the firſt is moſt proper for gold, and the laſt for ſilver.) When this ſize is almoſt dry, that it will juſt ſtick a little to the touch, lay on the leaf-ſilver, and cloſe it well to the ſize. See the article GILDING.

A Varniſh *for covering Silver.*

Melt in a well-glaz'd pipkin ſome fine turpentine, and put in three ounces of white amber finely powdered, (more or leſs, according as the quantity your work will require) put it in by little and little, keeping it continually ſtirring, adding by degrees ſome ſpirit of turpentine 'till all the amber is diſſolved; and then add to it an ounce of *ſarcocolla* well-beaten, and an ounce of *gum-elemi* well levigated, adding now and then a little ſpirit of turpentine, 'till all is diſſolved: do this over a gentle fire, and keep it conſtantly ſtirring.

This *varniſh* will be white and ſtrong as the former, and is to be uſed warm, and hardened by degrees in an oven, as varniſhed gold, and it will look like poliſhed ſilver.

Varniſh *for wood to mix with ſeveral colours.*

Take ſpirit of turpentine, and diſſolve it in a little *gum taccamahacca* over the fire, 'till it is a little thickened; and this may be uſed with any colour, that has been well ground with water, and afterwards reduced to a fine powder. When the work is done, you may, if you pleaſe, varniſh over your piece with the ſame *varniſh* directed for ſilver and wood, tables, tea-boards, or any thing elſe may be done in the ſame manner, as is directed for veſſels made of the paſte of paper and ſaw-duſt.

Varniſhing Prints, &c. *with white* Varniſh, *ſo as to bear water and poliſhing.*

The print ſhould be firſt paſted either on board or ſhock cloth, ſtrained on a frame; in order to do this well, prepare ſome ſtiff ſtarch; and with a ſpunge dipt in water, or thin ſtarch (without any blue in it) wet the back of your print: and if you deſign to lay it on a board, dip a large bruſh in thick ſtarch, and bruſh it over the board as even as poſſible, and let it dry (or you may lay a ground of whiting and ſize on the board firſt, which will do very well) then repeat it a ſecond time, and ſo continue 'till the veins or grain of the wood is quite filled.

In the laſt operation, when the ſtarch is juſt laid on, lay the wet print upon it, as ſmooth as poſſible, that there may be no wrinkles nor bubbles in it, and preſs it on cloſe every where, till it lies ſmooth, and ſo ſet it by to dry; which it will be, and fit to varniſh in twenty-four hours, with the following *varniſh*:

Take *Ichthyocolla*, or *fiſh-glue*, or *iſing-glaſs*, two ounces, and after you have pulled it into ſmall pieces, boil it in a pint of brandy, or ſtrong ſpirits, in a well-glaz'd earthen veſſel, 'till it comes to a ſtrong glue, which you may know by taking out a little, and expoſing it to the air; it is then fit for your purpoſe, but don't fail to make it as ſtrong as you can.

And while it is hot, with a large bruſh, bruſh over the print as quick as you can, and as ſmooth and even as may be; ſet it by for a day or two, and then do it over again with the ſame *varniſh* or glue, and let it dry again very well; then bruſh it over with white *varniſh* at ſuch a diſtance from the fire, that it may not bliſter. Repeat this two or three times; then let it ſtand for a day or two, and then varniſh it over again with the white *varniſh* the third time, with two or three paſſages of the bruſh; then let it ſtand for three or four days, and it will be hard enough to be poliſhed, which is to be done with a ſoft linnen cloth and ſome *Tripoli*, rubbing it very gently, 'till it is as ſmooth as may be, and afterwards clear it with flour and oil, and then it will appear as clear as glaſs; and if at any time it is ſullied with fly-ſhits, you may clean it, by waſhing it with a ſpunge and water.

The white Varniſh.

Take *gum ſandarach*, of the cleareſt and whiteſt ſort, eight ounces; *gum maſtick*, of the cleareſt ſort, half an ounce; of *ſarcocolla*, the whiteſt, three quarters of an ounce; *Venice* turpentine, an ounce and a half; *Benzoin*, the cleareſt, one quarter of an ounce; white roſin, one quarter of an ounce; *gum animæ*, three quarters of an ounce: let all theſe be diſſolved, and mix'd in the manner following;

Put the *ſarcocolla* and roſin into a little more ſpirits than will cover them to diſſolve; then add the *Benzoin*, *gum animæ*, and *Venice* turpentine, into either a glaſs or glaz'd earthen veſſel, and pour on as much ſpirits as will cover them an inch; then put the *gum maſtick* into a glaſs or glaz'd veſſel, and pour ſtrong ſpirits upon it, covering it alſo about an inch thick, to diſſolve it rightly; then put your *gum elemi* in a diſtinct veſſel as before, and cover it with ſpirits to diſſolve.

For this purpoſe, you need only break the roſin a little, and powder the *gum animæ*, *ſarcocolla*, and *benzoin*.

Let all ſtand three or four days to diſſolve, ſhaking the glaſſes, *&c.* two or three times a day, and afterwards put them all together into a glaz'd veſſel, ſtirring them well, and ſtrain the liquor and gums gently, beginning with the gums, through a linnen cloth.

Then put it into a bottle, and let it ſtand a week before you uſe it, and pour off as much of the clear only, as you think ſufficient for preſent uſe.

To paſte prints upon cloth for Varniſhing.

If the print be put upon a ſhock cloth, well ſtrained in a frame, bruſh the cloth over with ſtrong paſte, made with flour and water; and immediately bruſh over the back of the print with well-prepar'd ſtarch, and then bruſh the cloth over with the ſame ſtarch, and lay on the print as ſmooth as poſſible, without leaving any wrinkles or bubbles in the paper. This you ſhould take notice of, that when you have laid your paper upon the cloth, they will both together appear flagging and unſtrained; but as ſoon as they are dry, all will be ſmooth, as either of them was at firſt.

Let them ſtand ſo in a dry warm place for a day or two, and then you may *varniſh* your print as before directed, with glue made of *Ichthyocolla*, and then with the white *varniſh*.

With this *varniſh* you may mix up any colour, that has been ground dry, with a marble, and paint it upon any figure you have drawn, or upon any print you have paſted upon your work; but the *varniſhed* colours ſhould be chiefly put upon the ſhady.

Varniſh *made with ſeed* lacca.

Take a quart of ſtrong ſpirit of wine, put into a glaſs veſſel, and put to it ſix ounces of *ſeed-lacca*, and let them ſtand together for two days, ſhaking them often; then paſs it through a jelly-bag, or a flannel-bag, made like what is called *Hippocrates*'s ſleeve, letting the liquor drop into a well-glaz'd veſſel, and giving the gums a ſqueeze every now and then. When the *varniſh* is almoſt out of the bag, add more, and preſs it gently 'till all is ſtrained, and the dregs remain dry.

Be ſure you do not throw the dregs into the fire, for they will endanger ſetting the houſe on fire.

Put the *varniſh* up in a bottle, and keep it cloſe ſtopp'd, ſetting it by, 'till all the thick parts are ſettled to the bottom, which they will do in three or four days; then pour off the clear into a freſh bottle, and it will be fit for uſe.

As for *varniſh* made of *ſhell-lacca*, it is not of any great ſervice, tho' ſo often recommended, for it will not bear the poliſh.

When you lay on your *varniſhes*, take the following method;

1. If you *varniſh* wood, let your wood be very ſmooth, cloſe-grain'd, free from greaſe, and rubb'd with ruſhes.

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2. Lay on your colours as ſmooth as poſſible, and if the *varniſh* has any bliſters in it, take them off by a poliſh with ruſhes.

3. While you are *varniſhing*, keep your work warm, but not too hot.

4. In laying on your *varniſh*, begin in the middle, and ſtroke the bruſh to the outſide, then to another extreme part, and ſo on 'till all be covered; for if you begin at the edges, the bruſh will leave blots there, and make the work unequal.

5. In fine works uſe the fineſt *Tripoli* in poliſhing: do not poliſh it at one time only, but after the firſt time, let it dry for two or three days, and poliſh it again for the laſt time.

6. In the firſt poliſhing you muſt uſe a good deal of *Tripoli*, but in the next a very little will ſerve; when you have done, waſh off your *Tripoli* with a ſpunge and water; dry the *varniſh* with a dry linnen rag, and clear the work; if a white ground, with oil and whiting; or if black, with oil and lamp-black.

VARNISH [*with Potters*, &c.] is a ſort of ſhining plaiſter, with which potters-ware, *Delft*-ware, *China*-ware, *&c.* are covered, which gives them a ſmoothneſs and luſtre: melted lead is the *varniſh* us'd for the firſt, and *ſmalt* for the ſecond.

VARNISH [*with Medaliſts*] is alſo a name given to the colours, which antique medals have got in the earth.

The beauty, which nature alone is able to give to medals, and art has never yet attain'd to counterfeit, enhances the value of them; that is the colour, which certain ſoils (in which they have a long time lain) tinges the metals withal; ſome of which are *blue*, almoſt as beautiful as the *Turquois*; others with an inimitable *vermilion* colour; others with a certain ſhining poliſh'd brown, vaſtly finer than *Braſil* figures.

The moſt uſual *varniſh* is a beautiful *green*, which hangs to the fineſt ſtrokes without effacing them, more accurately than the fineſt enamel does on metals.

No metal but braſs is ſuſceptible of this; for the *green* ruſt, that gathers on ſilver, always ſpoils it; and it muſt be got off with vinegar or lemon-juice.

Falſifiers of medals have a falſe or modern *varniſh*, which they uſe on their counterfeits, to give them the appearance, or air, of being antique. But this may be diſcovered by its ſoftneſs, it being ſofter than the natural *varniſh*, which is as hard as the metal itſelf.

Some depoſite their ſpurious metals in the earth for a conſiderable time; by which means they contract a ſort of *varniſh*, which may impoſe upon the leſs knowing; others uſe *ſal-armoniac*, and others burnt paper.

VARNISH *for Glaſs.*

Take oil of *turpentine* ſix ounces, *Venice turpentine* three ounces, *gum hederæ*, i. e. *gum of ivy* (or rather *maſtich*) one ounce, put them into a glaſs-bottle, ſtop it well, and wax it, that no vapours may come forth; then diſſolve it in *balneo mariæ*, which will be done in about two hours time.

An uſeful Varniſh.

Take drying linſeed-oil, ſet it on the fire, and diſſolve it in ſome good roſin, or (which is better, but dearer) *gum-lacca*; let the quantity be ſuch as may make the oil thick as a balſam. When the roſin or gum is diſſolved, you may either work it of itſelf, or add to it ſome colour, as verdigreaſe, for a green; or amber, for an hair-colour; or indigo and white, for a light blue.

This will ſecure timber-work done over with it, equal to painting with colours in oil, and is much more eaſy to obtain; for linſeed-oil and roſin are more eaſily melted together by boiling, than colours can any ways be ground; and being of the conſiſtence of a balſam, works very readily with a bruſh, and of itſelf, without the addition of colours, bears a body ſufficient to ſecure all manner of timber-work, equal to moſt oil-colours.

In the working of it, there's no great skill required, if you can but uſe a painter's bruſh; only let the matter you lay it on be thoroughly drenched, that the outſide may be glazed with it: and if you deſire a colour on the outſide, you need only grind a colour with the laſt *varniſh* you lay on.

General Rules *to be obſerved in* Varniſhing.

Let your wood be cloſe-grain'd, exempt from all knots and greaſineſs, very ſmooth, and well ruſh'd. You muſt work in a room with a good fire, becauſe your work muſt be always warm, but never put it ſo near the fire as to ſcorch it, or make it quite hot; for that will bliſter and crack it, which is a damage can never be repaired. When you lay the grounds, warm your work before every waſh, and keep it in a gentle heat always, while 'tis drying. When 'tis ready for the pictures, rub the wrong ſide of the prints with ſtarch, and fix them on as flat as poſſible, that there may be no bliſters, nor any part which is not fix'd down cloſe with the ſtarch; otherwiſe the edges will be apt to riſe, and will always lie rough. When they are dry'd on, paſs them over with a ſmall pencil dipt in common ſize (which you muſt have ready melted) to ſecure the colours from running; when that is dry, you may begin to *varniſh*.

When you begin the *varniſhing* ſtroke, fix your bruſh in the middle of the work, and with a quick ſteady hand, draw it to the other end. Then fix it again on the place you begun at, and draw it to the other end; thus you muſt do 'till it is all *varniſhed*. The reaſon for this caution is, that if you drew your pencil from end to end, the bruſh being over-charg'd at firſt, the *varniſh* wou'd run over the edges of your work. Never paſs your bruſh twice over the ſame place while 'tis wet, for that will make it lie rough.

Stroke your bruſh once or twice againſt the ſide of the pot, every time you dip it to take *varniſh*, that it may not be too full: for the thinner you lay on the *varniſh* (each time) the ſmoother it will be, and not ſo liable to ſpeck and bubble. Continue *varniſhing* 'till the ground and pictures lie even; that is to ſay, that the ground be as high as the prints, and it all looks ſmooth and even. You muſt not omit *varniſhing* it once every day 'till it is finiſhed; then let it lie three weeks, or a month, before you poliſh it.

To poliſh. There are three ſeveral ways to poliſh, which I ſhall give you all. Firſt is, a pumice ſtone ſtamped and melted in water; ſmear your work with it, and rub it with felt, 'till all the ſtrokes of the pencil diſappear; then waſh it off with cold water, and wipe it off with a ſoft cloth or muſlin.

The ſecond is, the duſt which comes from ſawing of ſtones, finely ſifted, and us'd like the pumice-ſtone.

The third is with *tripoli.* Wrap a piece of very fine old linnen about your fore-finger. Dip it in water, then into the *tripoli*, which muſt be ſcrap'd with a piece of glaſs, or otherwiſe reduced to a very fine powder, without the leaſt grittineſs, for that would ruin all. Let your hand be moderately hard, and very even in all your poliſhing ſtrokes. Poliſh and brighten one place, as much as for that time you intend to do, before you paſs to another.

Remember not to poliſh your work, as ſmooth as you intend at one time: but let it reſt two or three days, and then give it the finiſhing ſtroke. Take a large quantity of *tripoli* for the firſt poliſhing, 'till it begins to become ſmooth; the ſecond time a ſmall quantity will ſuffice. Let your endeavours be chiefly to poliſh the ground; for that being plain, will ſhew all faults the more.

To clear it up, waſh off the *tripoli* with a ſpunge and water, and wipe it dry with a fine ſoft cloth: mix oil and lamp-black together, and with that anoint your work all over. Then take another ſoft cloth, and with a nimble quick ſtroke, and a hard hand, take the oil entirely off, and you will find it anſwer the pains you have been at.

This way of clearing ſerves for all but the white and yellows, where inſtead of lamp-black, you muſt mix fine flower with the oil. And in the poliſhing, your hand muſt not be ſo heavy as in poliſhing other colours.

To make Gold Size.

Take of *gum-anima* half an ounce, *gum-aſpaltum* half an ounce, *litharge of gold* a quarter of an ounce, *red-lead* and *brown-umber*,

ber, of each a quarter of an ounce; put all theſe into a new earthen pipkin, that holds one third more than you put in: put in half a quarter of a pint of linſeed-oil, and a quarter of a pint of drying oil. Set the pipkin over a gentle fire, that does not flame out in the leaſt; let it but juſt bubble up, or almoſt boil, for ſhould it run over, it would fire the chimney. As ſoon as it begins to bubble or boil, keep ſtirring it with a ſtick 'till the gums are all melted thoroughly, and that it becomes thick and ropy like treacle, then 'tis boil'd enough. Take it off the fire, and when the extremity of the heat is over, then ſtrain it through a coarſe linnen cloth into another earthen pot, there to cool and lie ready for uſe. When you uſe it, put ſome of it into a muſcle-ſhell, with as much oil of turpentine as will diſſolve the ſize, and make it as thin as the muddy part of the *ſeed-lac varniſh*: hold it over a candle, and when melted, ſtrain it through a linnen rag into another ſhell; add to it as much vermilion as will make it of a darkiſh red.

Draw the figure or pattern, which you deſign to gild, after the ground of your work is laid; then with a pencil, proportioned to the work, lay the ſize neatly on thoſe places you intend to gild, and no other. Let it ſtand 'till it is ſo dry, that when you touch it with your finger it may be glutinous and clammy, and ſtick a little; but not ſo moiſt, that the leaſt ſpot or ſpeck ſhould come off with your fingers, not unlike to thick glue when 'tis half dry. When it juſt anſwers this deſcription, take a piece of waſh-leather, rap it round your fore-finger, and dip it into your gold-duſt (which you muſt have ready in a paper) and rub all over where the gold ſize is laid. If any ſhould be ſprinkled about your work, ſweep it into the paper again with a clean pencil that has been uſ'd. When your gold is dry, ſecure it with the following *varniſh*:

The ſecuring Varniſh *to be uſed only in gold work.*

Take of the beſt *Venice turpentine*, as much as you pleaſe, put it into a pipkin that will hold double the quantity you put in; ſet it over a clear gentle fire, and be cautious it does not boil over. When it boils, which muſt be very gently, keep it always ſtirring with a ſtick 'till it is boil'd enough, which you may know by pouring ſome on the ground; for when 'tis cold, it will crumble into powder between your fingers. When it is ſufficiently boil'd, let it cool, and keep it for the following uſe.

Take a quarter of a pint of the cleareſt *ſeed-lac varniſh*, and one ounce of the *turpentine* finely powder'd; put them into a double glaſs-vial, large enough to contain twice as much; ſtop it cloſe, and ſet it over a very gentle fire, that it heat leiſurely, to prevent the bottle's breaking. When it is very hot, the danger is paſt: let it juſt bubble up for a little time; then take it off, and unſtop the bottle, ſhaking it well: ſtop it again, and ſet it on the fire to bubble as before. Let it continue 'till the *turpentine* be diſſolv'd to the bigneſs of a large pea, that being the droſs, will not incorporate with the reſt; take it off, and let it ſtand two days to ſettle, pour it off clear, and keep it for uſe. As this is only to ſecure the gold, you muſt be very careful in laying it on, that it touch not the leaſt part of your ground, nor any thing but the gold. If there are colours mix'd amongſt it, finiſh it up with the white *varniſh*. If the deſign be all gold, finiſh it with the following *varniſh*.

N. B. *The Gold muſt be paſs'd over twice or thrice with the* ſecuring Varniſh.

The finiſhing Varniſh *for gold-work.*

Take one pound of *Venice turpentine*, three pints of water; put them into an earthen pipkin, big enough to hold twice the quantity; place them over a gentle fire, and let it warm by degrees 'till it begins to bubble up: then keeping it always ſtirring with a ſtick, that it may boil leiſurely for ſome time, pour ſome of this liquor on the ground; and when it is cold, if it crumbles to powder in your fingers, it is boil'd enough. Set it by 'till it is cool enough to take into your hands, and ſqueeze the water entirely out of it; then make it into a ball, and after a day or two beat it into fine powder for your uſe; ſet it in a very dry place, but not near the fire, for that will melt it. Put one ounce of this powder'd *turpentine* to half a pint of the beſt *ſeed-lac varniſh*; put it in a bottle that will hold twice as much cloſe ſtopp'd; when it has ſtood ſome time on a gentle fire, take it off, unſtop, and ſhake it. Continue this 'till the *turpentine* be diſſolved to the bigneſs of a large pea; ſet it by two days to cool and ſettle, then pour off the cleareſt for your work. Six or eight times *varniſhing* will do, but you muſt uſe your own judgment according to the colour of the gold. Let it ſtand three weeks or a month before you poliſh.

GIORGIO VASARI born in the year 1514. ſcholar of *Michael Angelo* and *Andrea del Sarto*, liv'd at *Piſa*, *Bologna*, *Florence*, *Venice*, *Naples*, *Rome*, &c. excell'd in hiſtory, portraits and architecture, died in the year 1578, aged 64 years.

V. C. ſignifies *Vincenzio Caccianemici* a nobleman of *Bologna*, and painter.

V. C. V. a mark uſed by an antient engraver in a *St. Bartholomew* and a *St. George*.

TITIANO VECELLI *da* CADORE born in the year 1477, ſcholar of *Gio Bellini* and *Giorgione*, liv'd at *Venice*, excell'd in hiſtory-painting, portraits and landskips, died in 1576, aged 99 years.

VENEERING }
VANEERING } Is a kind of marquetry or inlaying; by which ſeveral thin ſlices or leaves of fine woods of different kinds are apply'd and faſten'd on a ground of ſome common wood.

There are two kinds of inlaying; the one, which is the moſt common and more ordinary, goes no farther than the making of compartments of different woods; the other requires much more art, in repreſenting flowers, birds, and the like figures.

The firſt kind is properly call'd *veneering*; the latter is more properly call'd *marquetry, which ſee.*

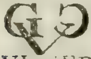
The wood uſed in *veneering* is firſt ſaw'd out into ſlices or leaves about a line in thickneſs, (*i. e.* the twelfth part of an inch:) in order to ſaw them, the blocks or planks are plac'd upright, in a kind of ſawing-preſs.

Theſe ſlices are afterwards cut into narrow ſlips, and faſhion'd divers ways, according to the deſign propoſed; then the joints having been exactly and nicely adjuſted, and the pieces brought down to their proper thickneſs, with ſeveral planes for the purpoſe, they are glued down on a ground or block with good, ſtrong *Engliſh* glue.

The pieces being thus jointed and glued, the work, if ſmall, is put in a preſs; if large, 'tis laid on a bench cover'd with a board, and preſſed down with poles or pieces of wood, one end of which reaches to the cieling of the room, and the other bears on the board.

When the *glue* is thoroughly dry, it is taken out of the preſs and finiſh'd; firſt with little planes, then with divers ſcrapers, ſome of which reſemble raſps, which take off the dents, *&c.* left by the planes.

After it has been ſufficiently ſcrap'd, they poliſh it with the skin of a ſea-dog, wax and a bruſh, or poliſher of ſhave-graſs: which is the laſt preparation.


JULIO CESARE VENENTI, an engraver of *Bologna*, uſed this mark.

VENERATION. *Admiration* begets *eſteem*, and *eſteem veneration*, in which the eye-brows will be depreſs'd in the ſame manner as in *eſteem*; the face will be alſo bowed downward, but the eye-balls will be more turned up under the brows.

The mouth will be open, and the corners drawn back but a little lower than in that of *eſteem.*

This depreſſion of the mouth and eye-brows indicates a ſubmiſſion and reſpect of the ſoul to an object that ſhe believes to be above her: the eye-ball turned upwards ſeems to intimate the elevation of the object conſidered, which it acknowledges to be worthy of *veneration.*

But if the *veneration* is caus'd by an object that claims our *faith*, in that caſe all the parts of the viſage will be lower depreſs'd than in the former action.

The eyes and mouth will be clos'd; ſhewing by this action, that the exterior ſenſes have no part therein.

As to the poſture of the body it ſhall be more bowed in *veneration* than in *eſteem*, the arms and hands almoſt joined, the knees on the ground, and all the parts of the body ſhall indicate a profound reſpect.

But in an action which ſhews *faith*, the body may be bowed intirely down; the arms folded, and joining to the body; the hands croſſed the one over the other, and the whole poſture ought to ſhew a profound humility.

VENUS. *Horace* and *Virgil* repreſent the chariot of *Venus* as drawn by two white ſwans, which *Statius* ſays are attributed to her, as being moſt mild, innocent, and harmleſs.

Pauſanias deſcribes her as drawn in a coach through the airy paſſages by two white doves, which are called the birds of *Venus*.

The ancients repreſented her in the form of a moſt beautiful and young woman, ſtanding upright in the ſhell of a large fiſh, drawn by two ſtrange fiſhes.

She is alſo depicted with yellow hair, clad in a black, ſcarlet, or dun-coloured robe.

Praxiteles, an excellent ſtatuary of the iſland of *Gnidos*, made her image naked, without any clothes, and the ſame was done by the *Grecians*.

By this was intimated, that all licentious and libidinous perſons, by reaſon of their inordinate luſts, were like beaſts, depriv'd of ſenſe, and left as it were naked, and deſpoil'd of reaſon and underſtanding; and oftentimes alſo ſtripp'd thereby of their riches, goods, and eſtates.

Lactantius tells us, that the *Lacedæmonians* made the image of *Venus* arm'd like a warrior, holding in the one hand a ſpear, and in the other a ſhield or target.

This they did on account of a certain victory, which the Lacedæmonian *women obtain'd over their enemies, the people of* Meſſenia; *which ſucceſs, they imagined, proceeded from the power and aſſiſtance of* Venus, *as inſpiring the hearts of theſe women with courage, ſtoutneſs, and reſolution.*

VERDEGRIS }
VERDEGREASE } Is a kind of ruſt of copper, of conſiderable uſe in painting for a *green* colour.

It is a preparation made of plates of copper, and the husks of grapes well-ſaturated with wine, put up in earthen pots, and diſpos'd *layer upon layer*, i. e. firſt husks and then copper; and this repeated 'till the veſſel is moderately fill'd.

Theſe pots are afterwards ſet in a cellar, where they are let to ſtand ſome time, and then taken out, to gather the *verdegreaſe*, which is a green ruſt, with which the plates are covered all over.

The greateſt part of the *verdegreaſe* us'd in ***Europe***, comes from *Languedoc* in ***France***, being made of the husks of the grapes of that country, and is brought over in cakes of about twenty-five pound weight.

The *cryſtalliz'd verdegreaſe*, or *cryſtals* of *verdegreaſe*, or *calcin'd* or *diſtill'd verdegreaſe*, is *verdegreaſe* diſſolv'd in diſtill'd vinegar, and afterwards filtred, evaporated, and cryſtalliz'd in a cellar. This is us'd by painters to make a green colour, eſpecially in miniature; it makes a beautiful tranſparent green for japanning on glaſs, being ground with *oil of turpentine*, and mix'd with common varniſh, and leaf-gold or ſilver laid on the backſide of it.

This commonly comes from ***Holland***, or ***Lyons*** in ***France***, and on ſticks in form like our ſugar-candy. To be good, theſe cryſtals muſt be beautiful, clean, and tranſparent, very dry, and as free from ſticks as poſſible.

Cryſtals of *verdegreaſe* are likewiſe made by diſſolving *copper*, granulated in ſpirit of nitre, and afterwards evaporating to a ſcum or pellicle, and ſetting it in a cellar to cryſtallize.

Verdegreaſe is the plague of all colours, and enough to ſpoil a whole picture in oil-painting, if the leaſt part of it enters into the priming of the cloth, yet 'tis a beautiful and agreeable colour; ſometimes 'tis calcinated to take off its malignity; but 'tis dangerous to calcinate, as well as *red arſenick*; and let it be ever ſo well purified, it muſt be uſed alone, for it will ſpoil all the colours that are mix'd with it.

It is made uſe of, becauſe it dries very much; and only a little of it is us'd, mix'd in blacks, which never dry alone.

The painter ought to take care, that he does not uſe the pencil with which he painted *verdegreaſe* in any other colours.

VERDETER } VERDITER } VERDITURE } Is properly a native mineral ſubſtance, of a ſtony conſiſtence, and of a blue colour, but ſpangled with little ſhining points like gems; it is found in the mountains of ***Hungary*** and ***Moravia***, and is the ſame that is alſo call'd *lapis **Armenius***.

The *green* us'd by the painters, and call'd *verditer*, ſhould be made of this ſtone well-ground and cleanſed by waſhing.

But this ſtone being very rare, the *verditer* commonly us'd is not a native, but a factitious ſubſtance; which ſome ſay is prepared by caſting wine or water upon new copper, as it comes red-hot out of the furnace, and catching the ſteams that riſe from it upon copper-plates: others again ſay, it is prepar'd by diſſolving copper-plates in wine, much after the manner of *verdegreaſe*.

But the method of making it in *England* is as follows:

The refiners pour their *copper-water* into an hundred pound weight of *whiting*, ſtirring them well together every day for ſome hours, 'till the water grows pale; then they pour that off, and ſet it by for further uſe, and pour on more of the green water, repeating this 'till the *verditer* is made; which they then take out, and lay on large pieces of chalk in the ſun to dry.

The water which is pour'd off from the *verditer*, (which remains at the bottom of the tub) is put into a copper, and boil'd 'till it comes to the conſiſtence of water-gruel; now conſiſting principally of *ſalt-petre* reduc'd, moſt of the ſpirit of *vitriol* being gone with the copper into the *verditer*: and a diſh full of this being put into the other materials for *aqua-fortis*, is rediſtill'd, and makes what they call a double water, which is near twice as good as that made without it.

HENRY VERGAZOON was a *Dutch* painter of lands and ruins, but chiefly the latter, which he performed exceeding neatly; his colouring was very natural, but his landskip part commonly too dark and gloomy, appearing as if it had been drawn for a night-piece: he painted ſometimes ſmall portraits, which were very curious. He left *England* ſome time ago, and died in *France*.

VERITY is repreſented [in *Painting*, &c.] by a naked beauty, holding a ſun in her right hand, in her left a book open with a palm, under one foot the globe of the world.

Naked, becauſe downright ſimplicity is natural to her; the ſun ſhews her great delight in cleanneſs; the book, that the truth of things may be found in good authors; the palm, her riſing the more ſhe is depreſs'd; the globe, that being immortal, ſhe is the ſtrongeſt of all things in the world, therefore tramples on it.

VERMILION is a very bright beautiful red colour, in great eſteem among the ancients under the name of *minium*.

There are two kinds of it, the one *natural*, and the other *factitious*.

The *natural* is found in ſome ſilver mines in the form of a ruddy ſand, which is afterwards prepar'd and purified by ſeveral lotions and coctions.

The *artificial* is made of mineral *cinnabar*, ground up with *aqua-vita* and urine, and afterwards dried.

It is alſo made of *lead* burnt and waſh'd, or of *ceruſs* prepar'd by fire: but this is not properly call'd *vermilion*, but *red-lead*.

Yet this laſt, however, ſeems to be the real *vermilion* of the *ancients*, and both apothecaries and painters ſtill give it the name to enhance the price.

We have two kinds of *vermilion* from *Holland*, the one of a deep red, the other pale; but 'tis the ſame ſtuff at the bottom: the only difference of colour, proceeding from the *cinnabar's* being more or leſs ground: when the *cinnabar* is finely ground, the *vermilion* is pale; and this is preferr'd before that, which is coarſer and redder.

It is of very great uſe with painters in oil and miniature; and among the ladies for a fucus, or paint, to heighten the complexion of ſuch as are too pale.

Vermilion ſome diſapprove of, to be us'd in painting prints, unleſs it be prepared by waſhing, as is directed for *minium*; and then chiefly for dry painting, except it be by thoſe perſons, who can uſe it moderately, and with judgment; for all heavy colours will drown the ſhades or ſtrokes of the engraver.

ANDREA VEROCCHIO was the firſt who found out the taking off, and preſerving the features of the face in plaiſter of *Paris*, born in the year 1431, liv'd at *Florence*, excell'd in hiſtory, muſick, ſculpture, and architecture, died in the year 1488, aged 56 years.

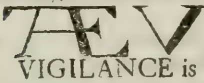
VERTUE is repreſented [in *Painting*, &c.] by *Hercules* naked, only with a lion's skin hung on his ſhoulder, or wrapp'd about him, and a knotted club, performing ſome one of his labours, as offering to ſtrike a dragon, keeping an apple-tree, or holding in his hand three golden apples.

He is drawn naked to intimate his ſimplicity: and by the dragon is ſet forth all manner of vices; by the lion's skin magnanimity and greatneſs; by his oaken club, reaſon and policy; by its knottineſs, the difficulty, pains, and labour, in ſeeking after vertue; *by the three golden apples, the three heroical vertues, moderation, content, and labour.*

VES. S. ſtands for *Veſpaſiano Strada* of *Rome*.

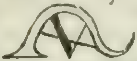
VICTORY is repreſented [in *Painting*, &c.] by a young lady clothed in gold, having wings on her ſhoulders, holding in her right hand a garland of laurel and olive, in her left hand a palm-branch, ſitting upon a multitude of trophies of arms and ſpoils of enemies of all ſorts.

The laurel, olive, and palm, are ſigns of honour and victory amongſt the ancients, as their medals ſhew.



ÆNEAS VIGHI of *Parma*. His other marks are Æ. E. V. Æ. V.

VIGILANCE is repreſented [in *Painting*, &c.] by the ſame deſcription as *Care*, whither you are referred. Every body knows that the lamp, book, and crane, denote *vigilance*. The cranes flying together, when they would reſt ſecurely, one of them holds a ſtone in its claw; the other, ſo long as the ſtone does not fall, are ſecure and ſafe by the *vigilance* of their companion; and it falls only, when the guards fall aſleep, at the noiſe of which they fly away.



FRANCIS VILLAMENA of *Aſſize*, an excellent and expeditious engraver. He likewiſe us'd the following letters F. V. F. or F. *Villam.* F.

LIONARDO *da* VINCI of noble deſcent, born in the year 1445, ſcholar of *Andrea Verocchio*, liv'd at *Florence*, excell'd in painting hiſtory, portraiture, architecture, and ſculpture; died in the year 1520, aged 75 years.

GIO BATTISTA VIOLA, born in the year 1576, ſcholar of *Annibal Caracci*, liv'd at *Rome*, &c. excellent at hiſtory, and chiefly at landskip, died in the year 1682, aged 46 years.

Of dying VIOLET *and Purple colours.*

1 *To make a purple dye.*

Take water q. ſ. *alum* twenty ounces, *madder* five ounces; boil, enter twenty yards of ſtuff, and boil it two hours and an half; take it out, and waſh it well; waſh the lead, and then put in clean water a ſufficient quantity, *logwood* ground two pounds, boil it a while, and enter your cloth, handle it well, and take it out and cool it; enter it again, and put it in and out 'till the colour is ſtrong enough.

2. *To make a* Violet *colour in grain out of a ſad Blue.*

Take fair water, clear bran-liquor, of each equal parts, a ſufficient quantity; *alum* nine pounds and an half, *tartar* five pounds and an half; melt them, and enter thirty pounds weight of wool, yarn, ſtuff, cloth, *&c.* of a ſad blue colour: boil four hours, cool, waſh it in cold water. Take freſh bran-liquor a ſufficient quantity, *cochineal*, *tartar*, both in fine powder, of each fifteen ounces; mix, enter your cloth, handle it to a good heat, boil it two hours, handle it well, take it out and waſh it, and it will be a pure *violet* or purple colour.

3. *Another purple colour without bluing.*

Take clear ſtale wheat bran-liquor, or ſour tapwort, a ſufficient quantity; *alum* three pounds, enter twenty yards of broad cloth, boil it three hours, cool and waſh it well.

Take freſh bran-liquor a ſufficient quantity, *madder* twenty ounces, enter your cloth, boil with a quick fire, cool and waſh. Take clear or fair water a ſufficient quantity, *logwood* ground twenty-four pounds, boil half an hour, and put in ſome urine; then enter your cloth, and handle it, and boil half an hour; take it out and cool it, add *nut-galls* bruiſed two ounces, and enter your cloth again, handle it, and boil it half an hour, cool and waſh it.

4. *Another* Violet *or purple colour.*

Take clear ſtale bran-liquor a ſufficient quantity, *alum* three pounds, enter twenty yards of broad cloth, and boil two hours and an half; cool and waſh well. Take freſh liquor a ſufficient quantity, *madder* twenty ounces, enter your cloth, and boil with a quick fire, cool and waſh well. Take fair water a ſufficient quantity, *logwood* ground eight ounces, *Braſil* ground two ounces; let them boil a quarter of an hour, enter your cloth at a boiling heat, handle it, and boil a quarter of an hour; take it out, and cool it; add urine a ſufficient quantity; enter your cloth again, boil a quarter of an hour, then cool and waſh it well.

5. *A good* Violet *or purple colour.*

Take water four gallons, *myrtle-berries* eight pounds, *alum* ten ounces, calcined braſs one ounce, mix them in a braſs kettle or veſſel, boil half an hour, and ſtrain it.

6. *Another purple colour.*

Take *orchal*, mix it with half urine, and let it boil 'till it is of a dark colour; then put in the matter you would dye, letting it lie twenty-fours or more.

7. *An excellent* Violet *colour.*

Take calcin'd *tartar*, *turnſole*, of each a pound, beat them and tye them up in a linnen cloth, and ſteep them twenty-four hours in water, and then put in the matter, which you would have to be of a *violet* colour.

To dye Stuffs, &c. *of a beautiful* Violet *colour.*

Alum the ſtuffs with half a pound of *alum*, two ounces of *tartar*, and a handful of *madder* in clear rain-water made hot, for every pound of ſtuff; let theſe ingredients be ſtirred well together, and when they are diſſolv'd and begin to boil, put in the ſtuffs to be dyed, boil them for half an hour, take them out, let them cool, and rinſe them out.

Put freſh water to the liquor, and put in a quarter of a pound of brown wood in a clean bag, boil it for an hour and an half, and then put in the goods again, and boil it for an hour and an half; then take it out, and put into the hot ſuds a quarter of a pound of *verdegreaſe*, it being firſt diſſolv'd in warm water. Stir it well about, and then put in the ſtuffs again, ſtirring it about for a quarter of an hour, 'till it begins to boil; then take it out, cool and rinſe it, and it will be of the moſt beautiful *violet* colour.

Another. Having alumed the ware as uſual with one half ſtarch-water, allowing for every pound two ounces of *alum*, and an ounce of *tartar*; boil them together for an hour: then having hung other freſh water over the fire, when it is hot, for every pound of ware put in two ounces and an half of *Braſil* ſhavings, and a ſufficient quantity of great pot-aſhes; boil them together ſor a quarter of an hour, and then put in the ſtuffs, and there keep them 'till they take the dye; then cool them, and rinſe them out.

To dye Thread of a laſting Violet *colour.*

Boil half a pound of *tartar*, half a pound of *alum*, two ounces of *Braſil* wood, and half an ounce of *ſalt-petre* together, then lay the thread four hours in the liquor; then rinſe it out, and dry it. *Then brown it* as follows;

Boil a pound of *brown wood*, and half a pound of *Braſil* in a large veſſel; and uſe the dye in the following manner:

Divide it into four equal parts; remembring that each part is to be uſed warm, and the thread dyed after each operation; and when the firſt part is us'd, let there be added to it half an ounce of *ſumach*, and one drachm of *ſalt-petre*.

The ſecond time, a quarter of an ounce of calcin'd *tartar*, and one drachm of *verdegreaſe* powdered.

The third time, a quarter of an ounce of *ſumach*, and one drachm of *ſalt-petre*.

The fourth and laſt time, if the thread remains a little reddiſh, pour in a quart of hot ſharp lye, and you will find the thread of a beautiful *violet* brown.

But if the thread be boiled in *alum*, and blued with *woad*, and then browned with *Braſil*, the colour will be more beautiful and laſting.

To dye a good crimſon Violet.

Firſt dye the ſtuff a deep blue green, and boil it as for right crimſon, rinſe it very clean out of the ſuds, and finiſh it with three drachms of *cochineal*, in proportion to one pound of ware, and you will have a right good colour.

A brown Violet *colour.*

For twenty-five yards of fuſtian, frize, or other goods, take three quarters of a pound of *alum*, half a pound of *tartar*, half an ounce of *ſal-armoniac*, boil the ſtuff in this liquor for two hours, rinſe it out in clean water, and dry it in order to blue it, as follows.

The Blue dye.

Dye it a deep laſting *blue* with *woad* or *indigo*, then rinſe it clean and dry it.

The Brown Violet.

Boil a pound of *Braſil* in a large pot by itſelf, and divide it into four equal parts; then with a clean ladle, put one part into the kettle before you put in the ſtuff, and alſo *ſalt-petre* and *ſal armoniac* pulveriz'd, of each one drachm; after this paſs the ſtuff very well through the dye, then dry it, and put in another part of the *Braſil*, and add a quarter of an ounce of powdered galls; then paſs the ſtuff through the dye again, and dry it again; thus repeating the operation twice or oftener; and after the fourth time, you will find it of a beautiful *violet* colour. But you ough to remember, that the fourth time you muſt uſe a clean ſharp lye, in order to brighten the luſtre, adding to it one drachm o calcin'd *alum.*

This colour may be produc'd from *brown wood*, and a quarter of a pound of *Braſil* in four or five operations, and by adding galls twice, but it is not ſo durable as the other; but in orde to render it more laſting, you may add more *brown wood* and *indigo*, and may in the laſt place brown it with *Braſil.*

To dye Silk of a Violet *colour.*

For every pound of ſilk, take one pound of *blue*, or *Provence* wood, boil and ſtir the ſilk in it, as in the red dye; put into the laſt ſuds a few galls, then rinſe the ſilk and dry it.

A good laſting Violet.

To every pound of ſilk take one pound of *galls*, and one pound of *blue wood*; and put in the ſilk when the ſuds are cold, for the colder the ſuds, the *bluer* the *violet* colour will be, which muſt always be bluer than the tawneys: let it lie a night in the ſuds, then in the morning rinſe and dry it.

From the following dye are compos'd the beſt *tawnies*, grey and crimſon goat-colours.

To dye Silk a Violet *brown.*

Let the ſilks be alumed as for *tawney*; and to every pound of ſilk, take two pound of *Provence* wood, boil it in a bag for a full hour; then take it out, put in the ſilk, boil that for an hour, and then take it out, and put in the bag again; then rinſe it in a lye, as is directed to be made for other colours, and without *bole-armoniac*, and after that in running water.

CRIMSON VIOLET.

The manner of dying Silk a purple.

Firſt boil and alum the ſilk as for *madder-red*; then put a ſufficient quantity of clean water into a clean kettle, and for every pound of ſilk take an ounce of *galls*, and an ounce and an half of *cochineal* reduc'd to a fine powder, one ounce of *gums*, boil them together as you do the *crimſon*; then lay the ſilk to ſoak in it for one night, after which cleanſe it, and you have a good purple.

VIRGIN *Copper* is that which never has been melted down.

Virgin Gold, is gold as it is got out of the ore, without any mixture or alloy; in which ſtate it is ſo ſoft, that it will take the impreſſion of a ſeal.

Virgin Mercury, is that which is found perfectly formed and fluid in the veins of mines; or at leaſt is got from the mineral earth by mere lotion, without fire.

Virgin Oil, is that which oozes ſpontaneouſly from the olive, *&c.* without preſſing.

Virgin Parchment, is properly that made of a kind of cap or caul, which ſome children bring into the world on their heads. But the term is alſo us'd for that made of the skin of an abortive lamb or calf.

Virgin Wax, is ſuch as has never been wrought, but remains as it came out of the hive.

VIRGINITY is repreſented [in *Painting*, &c.] by a pretty girl clothed in white, and crown'd with gold, her waiſt ſurrounded with a girdle (with an emerald) made of white wool, which in old times maids wore, called *Zona Virginæa*, not to be looſed, but by their husbands on their Wedding-Night.

The white cloths and the emerald ſhe has about her, and golden crown, denote purity.

VIRGULA DIVINATORIA is a forked branch in form of a Y, cut off a *hazle*-tree; by means of which, ſome pretend to diſcover mines, ſprings, *&c.* under ground.

The method of uſing it is as follows: The perſon who carries it walks very ſlowly over the places, where he imagines any mines or ſprings to be, and obſerves the rod to dip or incline to the ground; ſuppoſing that the *Effluvia* which exhale from the metals or water impregnating the wood, cauſes a dipping or inclination of it; which is the ſign of a diſcovery.

Tho' ſome diſpute the matter of fact, and deny it to be poſſible; yet others ſeeming to be convinc'd by the great number of experiments, alledg'd in its behalf, look out for the natural cauſes of it.

Theſe Authors ſay in behalf thereof, that the corpuſcles riſing from the minerals or ſprings, penetrating the rod, determine it to incline or bow down, in order to render it parallel to the vertical lines; which the *Effluvia* deſcribe in their riſe.

VIRTUE is repreſented [in *Painting*, &c.] by a comely virgin, having wings behind, a ſpear in her right hand, and in her left a crown of laurel, and a *Sun* in her boſom.

Young, becauſe ſhe never grows old, her actions commencing into habits; the wings ſignify her ſoaring aloft, far above the vulgar; the *Sun*, that his virtue inſpires virtue to the whole body; the laurel, that ſhe is ever green, being proof againſt vice; the ſpear, dignity ruling over vice.

TIMOTEO VITE *de* URBINO born in the year 1470, imitated *Rafaelle*, liv'd at *Urbino* and *Rome*, excell'd in hiſtory-painting, died in the year 1524, aged 54 years.

VITRIFICATION } Is the act of converting a body into
VITRIFACTION } glaſs, by means of fire.

Of all bodies, the aſhes of *fern*, *ſand*, *bricks* and *pebbles vitrify* the moſt eaſily: and accordingly of the aſhes of *fern* principally is glaſs made.

All metals, and even almoſt all natural bodies being thoroughly heated in the fire, *vitrify* or turn to glaſs. And this *vitrification* is the laſt effect of fire; after which the moſt intenſe heat of the largeſt burning-glaſs will make no further alteration.

VITRIOL is a kind of foſſil or mineral ſalt, chiefly found in copper mines; but is more properly rank'd among the claſs of ſemi-metals, as having a metallic matter mix'd or combin'd with its ſalt.

Vitriol is defin'd by *Boerhaave* to be a ſaline, metallic, tranſparent glebe; diſſoluble in water, and fuſible and calcinable by fire.

It is call'd by different names, according to the different places where it is dug; and the *vitriols* of thoſe alſo, differ from each other in both name and colour; ſome being *white*, others *blue*, and others *green*.

Roman vitriol, for inſtance, is *white*; that of *Cyprus blue*, and that of *Piſa* and *Germany greeniſh*.

White vitriol partakes but little of any metal; *blue* partakes of *copper*, and *green* of *iron*.

According to *Boerhaave*, *vitriols* conſiſt of a metallic part, with a ſulphur adhering to a menſtruons acid and water.

In *blue vitriol*, the metal wherewith the acid, *&c.* is join'd is copper.

In *white vitriol*, commonly call'd *white copperas*, it is mix'd with *lapis calaminaris*, or ſome ferruginous earth intermix'd with lead or tin.

In *green vitriol*, the acid is join'd with iron.

Theſe *vitriols* are generally *factitious*, being only a kind of cryſtals; drawn by the means of water from a ſort of marcaſite uſually found in mines, and call'd by naturaliſts *pyrites* or *quis*.

Roman vitriol is made by expoſing theſe *pyrites* to the air, till ſuch time as they calcine, and change into a greeniſh, and *vitriolic* calx or duſt.

In this ſtate they are thrown into the water, and are afterwards reduc'd into that kind of cryſtals, ſent to us from *Italy*, by boiling and evaporation.

All the other *vitriols* are made after the ſame manner; that is, much after the ſame manner as alum is made in *England*, or ſalt-petre in *France*.

For *green vitriol* they add a great number of pieces of iron to the liquor in the boiling; theſe raiſe a great ebullition. As ſoon as the iron is diſſolv'd, they evaporate the diſſolution to a certain degree, and ſo let it cryſtallize.

The cryſtals being form'd, there remains a thick, reddiſh, unctuous ſtyptic and aſtringent liquor.

A ſolution of *vitriol* mix'd with a tincture of galls, becomes inſtantly exceeding black, and 'tis this is the common writing-ink.

Vitriol enters into the compoſition of *aqua-fortis*.

Some naturaliſts hold *vitriol* to be the root or matrix of copper; becauſe in the copper mines they never dig deeper than the glebe, out of which the *vitriol* is drawn.

Tartar of vitriol is had by mixing oil of *vitriol* with oil of *tartar per deliquium*, procur'd by the firſt calcining; then diſtilling it: a ſalt precipitating to the bottom, which being ſet to exhale and cryſtallize, is the *tartar of vitriol*.

Metallic vitriols. It is to be obſerv'd, that all metals may be converted into *vitriols*, by diſſolving them with acid ſpirits, and letting them ſtand; though 'tis very difficult to obtain *vitriol* of gold and ſilver; by reaſon that theſe metals are not eaſily diſſolv'd by the ſpirit; but *vitriols* of iron and copper are eaſily had.

The way of purifying Vitriol *to make* Aqua-fortis *ſtronger and more penetrative.*

We have promis'd in the preceding pages to ſhew the way of purifying *vitriol*; which conſiſts of taking away the yellowneſs; which alone hinders the good effects it is capable of producing. Take *Roman vitriol*, the beſt you can get, diſſolve it in common warm water; then let it ſtand three days; then filter it, and fling away the yellow *fæces*; then evaporate in glaſs bodies two thirds of the water, and put the remainder into earthen glaz'd pans, and ſet it in a cool place for the cryſtal of it to ſhoot; which in twelve hours time, they will do about the brims of the pans, in little tranſparent pieces, like natural cryſtal of an *emerald*-colour: at the bottom there will remain a ſulphureous ſediment, which muſt be carefully ſeparated and caſt away.

Then you muſt take all thoſe little green cryſtals and diſſolve them again in warm water as before, and then filter and evaporate them in the ſame glaſs bodies; and ſet them again to cryſtallize as before in a cool place, taking care to ſeparate all the yellow *fæces* you find. Reiterate this proceſs of diſſolving and filtering, evaporating and cryſtallizing the third time, then you will have a well-purified and refin'd cryſtal.

We will here add, for the ſake of the curious, that thoſe who make uſe of *vitriol* inſtead of *roach alum* to make *aqua-fortis*, the preparation whereof we have ſhewn elſewhere, ought to take a ſpecial care in the diſtillation, that as ſoon as the red fumes are paſt, all the ſpirits of nitre are raiſed, and that then the fire muſt be extinguiſh'd: for that which follows after is only a ſpirit of *vitriol*, which hinders the operation of the ſpirit of nitre in the ſolution of metal.

You may alſo draw a parting water in twelve hours time, (as ſome refiners do) during which time, but little ſpirit of *vitriol* can ariſe with their fires.

ULTRAMARINE is a rich and beautiful blue uſed by *Painters* from an azure ſtone commonly call'd *Lapis Lazuli*, which is an opaque ſtone of a fine sky-colour or *Turkiſh* blue; or like the blue flowers that grow in corn-fields; it is embelliſh'd with ſmall ſtreaks and ſparkles of a gold colour.

This ſtone comes from *Perſia* and the *Eaſt-Indies*, and as ſome ſay from *Africa*; but if from the laſt, it is in no great quantities.

There is alſo a kind of *lapis lazuli* found in *Germany* and *Hungary*; but not fix'd, tho' as hard as that from *Aſia*, which they call *Leſurſtein* and its colour *Aſurbleau*; but its colour changes in ſome time, and becomes greeniſh: however it is uſed by *Painters*.

The beſt *Lapis Lazuli* is that which is fix'd; that is, can endure the fire without altering colour.

Before you proceed to extract your *ultramarine*, take ſome account of the manner, to know whether the ſtone be good, for unleſs it is ſingularly ſo, you'll loſe your labour: put pieces thereof on live coals, and blow them continually for an hour; if they retain their firſt hardneſs and colour afterwards, you may conclude them good; but if they crumble between your fingers, they are naught. It may be tried otherwiſe in an iron-ladle put into a furnace with ſome of the ſtone to heat, and ſo quench it in ſtrong vinegar; if the colour remains ſtill unchang'd and ſplendid, you may aſſure your ſelf 'tis good.

When you have made this tryal, calcine it, which to do the eaſier, break the ſtone to pieces, as ſmall as hazle-nuts, waſh them afterwards in warm water, and ſet them in a crucible, on a wind-furnace, or into an iron-ladle to reunite; then caſt them into a glaz'd earthen veſſel of diſtill'd vinegar to quench them in; do thus ſeven times, to prepare them by calcination for powdering, and to prevent their ſticking to the mortar.

Thus calcin'd, dry them well, and ſo powder them in a ſtone-mortar well cover'd, and accordingly ſearce it with the ſame caution, as perfumers do their moſt delicate and fineſt powders, leſt the beſt ſhould go off, and diſpel it ſelf in the air: and thus preſerve this precious powder with all imaginable care.

Some derive its name *Ultramarine* of the *Latin ultra* beyond and *marinus* of or belonging to the *Sea*; *q. d. beyond-ſea*, becauſe firſt brought into *Europe* from *India* and *Perſia*.

It is the common opinion, that the method of making it was firſt diſcover'd in *England* by a member of the *Eaſt-India* company; who having a quarrel with his aſſociates, made the ſecret publick to be reveng'd of them.

To make a liquid for moiſtning and grinding the powder withal, &c.

For moiſtning and grinding your aforeſaid powder of the ſtone, take a pound and a half of running water, and put this into a new earthen pot, add to it an egg-ſhell full of raw honey, boil it until it have no more ſcum; take the pot off, and keep this hydromel, or liquid for uſe in bottles, as we ſhall give occaſion for hereafter.

This done, take four ſcruples of the beſt *gum dragon*, grind it on your marble, with ſome of the hydromel, and then put it into a glaſs; add thereto as much hydromel as you find convenient to bring it to a violet-colour, ſo cover it, and preſerve it for uſe. This liquid is good for your powder of *lapis lazuli*; if the colour be too violet, add the leſs hereof; if otherwiſe, the more, as your judgment, or experience ſhall direct.

Put half a pound of powder at a time into a ſmall porphyry, or marble veſſel, the larger the mortar the worſe, for you'll loſe more, and be longer a grinding; pour leiſurely by little and little thereon, ſome of your violet liquid, grind theſe together for a full hour, ſtill wetting it; you may uſe three or four ounces of liquid to the half pound of powder, and you'll have it very good; you muſt take care of grinding it too long, for then it will loſe its colour.

When 'tis thus ground, dry it on a marble or flat ſtone, where the *Sun* does not come at all, cover it well to preſerve it from duſt; when 'tis dry, 'twill powder eaſily between your fingers, if it be rightly done; if ſo, let it alone on the marble, but if it be clammy, or ſtick, take it off, for it has ſtill ſome unctuoſity of the honey in it, which muſt be cleanſed away by a cement.

Your *lapis* being thus dry, waſh it well before you put it to the cement, for which you muſt uſe a glaz'd earthen baſon round above like a *barber*'s, and well glaz'd within; put your *lapis* therein, and pour thereon ſome of the mild *lixivium* hereafter mention'd, as much as will riſe above the ſurface four inches; waſh the *lapis* very well with your hands, and then let it ſettle, and 'twill precipitate. The liquid being clear'd again, decant it into a large copper, or earthen veſſel, then let the *lapis* dry in a ſhade in the ſame veſſel it was waſh'd in, and ſpread it afterwards on the flat marble, or porphyry, and there let it lie until quite dry: thus it is prepar'd for mixing with the cement, of which we will give the preparation hereafter

To prepare a mild and a ſtrong Lixivium *for the* Lapis Lazuli.

To make theſe *lixiviums*, take ten handfuls of vine-ſtalk aſhes well ſearc'd; put this into a large veſſel that will hold thirty pound of water, with a faucet at bottom; preſs the aſhes very well, and put to them twenty pound of warm water. When it is ſunk to the bottom, open the faucet, ſo as it may only drop into an earthen veſſel; when it is all come out, ſtop the hole, and ſtrain this *lixivium* through a felt ſtrainer, and ſo keep it in a glaſs, or glaz'd pot well cover'd: this is the ſtrong *lixivium*.

Again, pour in on the ſame aſhes, the like quantity of warm water, and do as before; ſo you'll have an indifferent ſtrong *lixivium*, which keep as the former.

Do this a third time, and you'll have the mild *lixivium* mention'd in the preceding page.

Theſe three are very uſeful both for moiſtning, and to draw the powder of *lapis lazuli* from the cement; wherewith it muſt be mix'd, as will be ſhewn anon: which ſeparation being ſometimes hard to perform, we are oblig'd to have recourſe to theſe varieties of *lixiviums* ſtronger, or weaker, as we find them convenient for the purpoſe.

You may yet make another *lixivium* to take away the greaſineſs of the cement thus; boil calx of *tartar*, as much as you pleaſe, in clean water, for about a quarter of an hour, and keep it for uſe as the former. This is excellent for waſhing the *lapis lazuli* with; it ſtrengthens and improves the colour thereof.

The form of the glaſſes for preſerving the liquids in, which are employ'd on the Lapis Lazuli.

There always remains ſome of your colour in the waters, or *lixiviums*, wherein the *lapis lazuli* is prepar'd throughout all the proceſs; you muſt therefore have a very large veſſel of braſs, or earthen ware, glaz'd and poliſh'd very well at bottom, wherein muſt be three holes; one in the middle of the ſide, the next a little lower, and the laſt about two inches from the bottom; ſtop theſe holes without-ſide very cloſe, to prevent leakage.

Then pour all your waters into this; though you then perceive no colour at all, yet after ten days you'll have it at bottom, whither it will deſcend gently; and to get it you muſt go artificially to work, firſt opening the firſt cock or hole, and let out the water above that, before you open the other two; and thus you may get the colour without muddying, or loſing any by the waters, which mix with the reſt.

To make ſtrong cement to mix with Lapis Lazuli, *to ſeparate the finer and better ſtuff from the other.*

One cannot ſo eaſily part the finer *lapis lazuli* from its groſſer parts, without making uſe of this cement to unbind the parts: take four ounces of very pure and clear *Venice-turpentine*; ſix ounces of roſin of the pine, ſix ounces of *Grecian* pitch, three ounces of very good maſtich, three ounces of freſh wax, an ounce and half of linſeed-oil cleanſed, as ſhall be directed.

Put the turpentine into a new-glaz'd earthen pot very clean, to diſſolve over a ſlow charcoal fire, and continue ſtirring it with a wooden ſpatula, throw into this by degrees, the roſin of the pine, in ſmall pieces, and ſtir it ſtill very well; thus put in ſucceſſively the pitch, the maſtick in powder, and laſt of all the wax ſliced ſmall, ſtirring all continually about to mix and incorporate. Take great care of your fire, leſt the cement ſhould blaze, or burn, all the ingredients being hot of themſelves, and combuſtible. Having well incorporated them, pour in the linſeed-oil, ſtirring it as before, and ſo let it boil gently for a quarter of an hour.

To try whether the cement be enough, drop ſome of it off the ſpatula into a veſſel of cold water: if it ſpread, 'tis not enough; but if it do not, 'tis ſufficiently boil'd; ſo take it off. Or elſe you may wet your fingers, and take a drop thereof, roll and draw it out in length; if it ſnaps and breaks of it ſelf, 'tis a ſign that 'tis enough: take it off, and pour it boiling hot into an hypocras-bag ſteeped before in hot water; take care to let it go all through into a veſſel of cold water, and for the better ſecurity, ſqueeze it along from top to bottom with two flat ſticks, that none may remain in your bag. Afterwards work it well with your hands, till all the water be drained from it, and becauſe being hot it may ſtick to your fingers, you may anoint them with ſome of the linſeed-oil.

The cement being thus prepared, keep it in a veſſel of cold water, ſhifting your water every day, or every ſecond day; and by this method you may keep it for ten years.

To make a weaker Cement for ſeparating the colours of Lapis Lazuli.

This ſecond cement, which is the ſofter and milder, ought to be firſt employ'd on the powder of *lapis lazuli*; it draws the colour much quicker and better than the ſtrong cement, which ought not to be uſed till after the milder; the whole ſecret of ſeparating the colours, conſiſting in uſing the cements; for without a due care hereof, it cannot be done perfectly.

To make this cement, you muſt take four ounces of very pure turpentine, four ounces of roſin of pine, ſix ounces of *Grecian* pitch, one ounce of freſh wax, ſix drams of linſeed-oil purified, mix and incorporate them ſucceſſively as before. Obſerve only, that this is ſooner done than the former, becauſe 'tis weaker, and will give the colour ſooneſt; therefore you muſt manage accordingly.

To purify Linſeed-Oil.

The uſe we have for linſeed-oil in our cement, obliges us to give this preparation, and way of purifying it, whereby it is made more fit for our purpoſe.

Take good and clear linſeed oil, of the colour of ſaffron, and put it into a glaſs, ſhap'd like an ox-horn, with an hole at bottom to let out the water, which you muſt mix with the oil, letting them ſettle until the oil riſes all uppermoſt; then open the hole, and let the water out, and the oil remain behind. Then ſhake the oil again, with more freſh water, let it ſettle, and the water run out as before; do thus eight or ten times, till the water comes out as clear as it went in, and ſo the oil will be pure and fit for your uſe; keep it well ſtopt in a glaſs bottle. If you can't get linſeed-oil, you may uſe oil of bitter-almonds, without purifying, for it needs none; but take notice, the linſeed oil is beſt of any, though cheaper than the other.

How to incorporate the powder of Lapis Lazuli *with the ſtrong, or weaker cement.*

We have already given the way to prepare the powder for mixing with the cement, to extract the colours; we now come to ſhew how to mix it with the cement, in order to extract the *ultramarine* from them for painting.

Take a pound of the powder, and the like quantity of cement aſſign'd before, obſerving always to take the firſt that was work'd with the hands; cut the cement ſmall, and the pieces being a little wet, put them into a glaz'd earthen pot, over a fire of red-hot aſhes to melt, and take care it does not boil; if it ſhould, you muſt prevent the damage which it might cauſe, by putting in ſome linſeed-oil. The cement being thus melted, anoint all your ſpatula over, from the handle downwards with the ſame oil, and ſo put in the powder by very little quantities, and taking a great deal of time, that they may the better incorporate; and be ſure to ſtir it all the while very well with the ſpatula, ſo as to make it all alike, until it become like an ointment or ſalve: then off with the pot, and throw the ſtuff boiling hot into an earthen-baſon of cold water, and at that very inſtant take off all that ſticks to the ſides of the pot. When it is cold enough to be handled, if it appears well colour'd, it is a ſign you have work'd it well: this done, rub your hand with linſeed-oil, and work it as they do a paſte of bread or dough, for one hour, that it may be throughly compact. The longer you work it, the better and eaſier the colour may be drawn; afterwards make it up like a loaf or brick, and ſet it in an earthen diſh to dry, pouring thereon ſome freſh water; let it ſteep for fifteen days, the longer the better for extracting the *ultramarine.*

To extract the Ultramarine.

Take therefore the loaf of cement and powder, waſhing it in the ſame water extraordinary well with your hands; weigh it to know the quantity of oil it requires, and put it into an earthen bowl or diſh, very ſmoothly glaz'd, rubbing firſt the bottom with your linſeed oil; then pour in water ſcarce warm'd, until it ariſe two inches above the matter; let it ſtand in this condition a full quarter of an hour (or leſs in the ſpring-time;) pour this water afterwards into the veſſel before mention'd, adding more warm water to your matter, and ſo it will ſoften: continue thus whilſt there remains any tincture thereon; by this means all the ſubſtance that is good for any thing, will be ſeparated from the cement, which cannot be done otherwiſe.

Whilſt it is imbib'd in the warm water, you muſt move and rowl it gently round with two ſticks, or ſpatula's of box, or any other well poliſh'd wood, rounded at the ends ſmooth like a wallnut; let them be about an ell long, and an inch thick. Whenever you perceive the matter ſtick to the bottom of your diſh, rub your hands with linſeed-oil, and ſtir it about leiſurely ſo as to colour the water, which you muſt put along with the former, in the mean time holding up the matter with your ſtaves, leſt it ſhould ſtick to the veſſel.

Take notice that a little ſteeping at firſt will tinge the water very much, and when the cement is juſt yielding its colour, it will diſcover certain bluiſh ſtreaks on the water like the *ſun*'s-rays, and then you muſt ſtrain this water out among the other, through a ſearce, that the groſſer part of the cement may remain; afterwards pour in by little and little the freſh warm water, ſtirring the cement eaſily, that it may not dilate too much, and give its colour all at once. After you have thus ſtirr'd it about five or ſix times, cloſe and amaſs it anew, by which means you'll ſee how much it is diminiſh'd, and what quantity of colour it has given.

If the *lapis* be good and right, you'll find the firſt ſteepings, yield about four or five ounces of *ultramarine*, which keep apart by its ſelf as the beſt and fineſt colour, though it appear groſſer than the others of this ſort, by reaſon of the gold-colour'd veins, which are peculiarly therein.

For the ſecond, whereof you'll have three or four ounces, you muſt follow the proceſſes aforementioned: this indeed will be finer than the other, but not ſo good a colour; keep it alſo by itſelf.

Draw off a third, and this will be ſtill finer than the former, but paler, and more bright coloured. You muſt ſtill purſue the ſame Directions to extract it, letting your Water be but half lukewarm, and take care to manage the cement dextrouſly with the ſpatula's, and ſo preſerve the colour apart.

You may extract a fourth colour after this rate, but the water muſt be hotter, and you muſt preſs the cement very well with the ſpatula's to ſqueeze out the colour; and if meer water will not do, make uſe of the mild *lixivium*. This laſt colour will be greyiſh or aſh-colour'd, and of no great value, and therefore not at all to be mix'd with any of the reſt.

Obſerve here that you can't take up leſs than eight hours full, to extract the colours, nor leſs than ten or twelve to allow the water for ſettling; and if you perceive the colour does not come out free enough with the warm water, add a third part of our mild *lixivium*, and if that does not do, uſe all *lixivium*, but let it be cold; and when that fails too of effecting it ſufficiently, you muſt make a *lixivium* of vine-ſtalk aſhes, and this being ſtrain'd, let it boil for half a quarter of an hour, until it be ſharp enough to bite your tongue; and then let it ſettle and grow clear; this is your laſt ſhift for extracting your colour, and with this heated, waſh your cement very well, and ſet it aſide. The whole deſign of all this trouble, is only to ſerve for obtaining the greater quantity of *ultramarine*, and this conſiſts in the goodneſs of the *lapis lazuli* and the cement, which the circumſpection and care taken in all their preparations muſt advance.

The method of cleanſing the Ultramarine *when it is ſeparated from the cement.*

After you have extracted all your colours out of the cement, and the water quite ſettled and ſeparated from them, pour on ſome of the mild *lixivium* before preſcribed, and ſo waſh them with your hands, (but don't rub it between them) thus you'll take away all the greaſe of the cement; afterwards waſh it three or four times in fair water, and let the waters ſettle well before you put them into their proper veſſels.

You may elſe another way purge the *ultramarine* thus: take the yolks of pullets-eggs, that have been fed only with corn, and not with greens; prick theſe with a pin, and ſo moiſten the colours, kneading the maſs with your hands, and waſhing it afterwards with your mild lixivium, until the lixivium falls off clear again. This done, waſh them three or four times over with fair water, letting the waters ſettle well before you put them into their veſſels.

This laſt way of purifying the *ultramarine*, is mighty effectual; but here is another help to be uſed with it, which is a very great ſecret, and performed thus: After the Colours are quite waſhed according to former directions, as well as poſſible, you muſt caſt therein by little and little, a bull's-gall, rubbing it by degrees with your hands; ſo waſh them often in clear water, and you'll have the colour in full perfection.

To ſtrain off the Ultramarine *already waſh'd and purified.*

It is neceſſary to ſtrain off the *ultramarine*, and the reſt of the colours, that if any greaſe, or unctuoſity of the cement remain, it may be taken quite away, for theſe colours require a perfect and extraordinary purification.

For this purpoſe take a fine ſearce, and pour thereon the laſt waters, with which you waſhed the *ultramarine*, and ſo ſtrain them afterwards through another fine ſearce, and a third time through red *quintain* or crape; but you muſt obſerve when you ſtrain them, to let them ſtand 'till you perceive them limpid and clear, and ſo ſoak off the water dextrouſly with a ſpunge, and be ſure not to ſtrain them promiſcuouſly all together.

This being done to all the waters, let your colours ſettle in their proper veſſels, and dry in the ſhade; when dry, put them into little leather bags; tie theſe cloſe, rubbing them and preſſing them with your hands: this will make them very ſubtile, and when the bags are opened, they'll ſhew much fairer than before.

To correct the colours juſt before prepared.

Few perſons, unleſs ſuch as are very curious of their work, make any uſe hereof, becauſe of the time it takes up, tho' it would turn very much to their account; for one ounce of this colour corrected, will go farther than three that are not.

If you would make your colours juſt before prepared, much finer and effectual than they are, mix them again with a ſtrong cement, and let them remain therein for three days; afterwards proceed according to the laſt directions, to ſeparate them again; reiterate this over again, and you'll have them exceeding good; and tho' they diminiſh ſomewhat in weight, yet that loſs will be repaid conſiderably in the beauty and value.

Another way to make Ultramarine, *and draw off the colours with more expedition.*

This method of making *ultramarine* is much more ready than the former; and experience will ſhew whether the colour be a gainer or loſer thereby.

Take a pound of *lapis lazuli*, calcine it in a crucible, and quench it afterwards in vinegar, ſo let it dry, and then reduce it to a very fine powder; grind it on a *porphyry* with fair water, and ſet in a glazed earthen veſſel in the ſhade, until it be dry; if you find it coagulated all in a maſs, you muſt powder it again.

This done, make a cement of three ounces of *Grecian* pitch, four ounces of roſin of the *pine*, three ounces of *maſtich*, three ounces of *frankincenſe*, two ounces of *oil-olive*; ſet theſe over a ſlow fire in a ſmall earthen pot, into which pour firſt the oil, and when that's hot, put in the roſin, then the pitch, then the incenſe, and laſt of all the *maſtich*, ſtirring them continually with the wooden *ſpatula*, and let them boil a little.

Having made the cement, get another earthen veſſel, and put thereinto the *lapis lazuli*, and pour on it the cement hot, ſtirring the whole together with the *ſpatula* very leiſurely, until they perfectly incorporate; let this ſtand a whole day, and when you would draw off the colours, pour thereon boiling water, ſtirring it very ſmartly.

When it begins to cool, pour it out, and ſo put in more hot water; do thus 'till the water begins to draw off the colour, and ſo continue until it be quite extracted; you may diſtinguiſh the waters, and ſo ſet them apart, and obtain the variety of colour as in the former way.

If your colour ſeems to be clammy or naſty, you may correct it thus: add thereto *tartar* diſſolved in water, as much as will drown it, and let it repoſe for one day at leaſt, ſo waſh it in warm water, and you will by that means have it very correct, and well-purified.

Another way to make Ultramarine.

Granting the two former ways to be ſufficient, we will however here give a third, which we believe may as well be pleaſing to thoſe, who are not ſatisfied with the other, as to ſuch perſons as have a curioſity for theſe ſorts of work; and thus we propoſe to proceed.

You muſt break the *lapis* into groſs pieces, as ſmall as nuts, then ſet theſe in a crucible into the furnace, 'till they redden with heat, and ſo caſt them into cold water; do thus ſix or ſeven times, and ſo reduce them to impalpable powder in a porphyry-mortar well covered over, leſt the powder, which is very ſubtile, ſhould diſperſe away into the air, and then ſearce it with a fine ſearce alſo covered.

After this, take roſin of *pines*, ordinary black pitch, *maſtich*, freſh wax, and *turpentine*, of each three ounces; of incenſe and linſeed-oil, each one ounce; melt all together in an earthen veſſel, ſtirring them very well, that they may mix; this ſtuff being well incorporated, caſt it into water, and keep it for uſe.

To each pound of *lapis lazuli* add ten ounces thereof, and ſet them to diſſolve in a pot over a ſmall fire, firſt melting the cement, and then caſting on the *lapis lazuli* by little and little, obſerving ſuch an order in this, and continually ſtirring the maſs with a ſtick, that they may mix inſenſibly together. Afterwards caſt the maſs into an earthen veſſel of cold water, and anointing your hands with linſeed-oil, mould it up into a number of cakes, or rolls, which leave in cold water for five days, ſhifting the water every other day.

This done, put them into a large and very clean glazed earthen veſſel, pouring on them ſome clean hot water; when that cools, pour in more hot, and do thus 'till the paſtils ſoften with the heat of the water: this done, put them into hot water, and let them be until it receive a bluiſh colour. Strain this water to receive the groſſer pieces, and ſo put it into another glazed earthen veſſel very clean, adding more to the paſtils, which ſtrain through a fine ſearce afterwards among the former; continue this until all the colour be extracted, and no more remain behind.

Your water muſt be only warm, otherwiſe it will occaſion a blackneſs in the colour, which is to be taken care of, and imports very much.

All the coloured waters being in the veſſel, you may cleanſe them of any unctuoſity, by repoſing them for twenty-four hours, in which time the colour will ſtick to the bottom; then you may pour off the water gently into another veſſel, and it will carry off the greaſe along with it; ſtrain it afterwards into the veſſel, where the colour is again, through a fine ſearce, and all the greaſe and naſtineſs will be left behind. Do thus thrice, ſtirring the colour very well every time you return the water to it, that the filth and greaſe may aſcend from it, and it will always ſtay in ſtraining on the ſearce behind the water.

This done, let the colour precipitate entirely, and ſo pour off all the water very leiſurely, for fear of diſturbing it; dry this colour, and you'll have delicate *ultramarine*.

If you would imitate this colour at little charge, make uſe of our blue enamel, after the ſame manner; and inſtead of the *lapis lazuli*, obſerving without exception the like regimen and preſcription juſt now delivered in every reſpect, and by this means you'll have a very pretty agreeable colour to paint with, and for tinging of glaſs.

This blue is one of the richeſt and moſt valuable colours uſed in painting.

Thoſe, who prepare it, make uſually four ſorts, which is procur'd by ſo many different lotions, or waſhings.

There is *ultramarine* of the firſt ſort ſold for 11 *l.* ſterling an ounce, and of the laſt for about twelve or fifteen ſhillings.

Ultramarine muſt be choſen of an high colour, and well-ground, which may be known by putting it between the teeth, and if it feel gritty, it is a ſign it has not been well-ground.

To know whether it be pure and unmix'd, put a little of it into a crucible, and ſo heat it red-hot; and if the powder has not chang'd its colour after this trial, it is certainly pure; on the contrary, if there be any change, or any black ſpecks in it, then it has been adulterated.

Beſides this, there is another ſort call'd *common*, or *Dutch ultramarine*, which is only *lapis*, or *ſmalt* well-ground and pulveriz'd; the colour of which, when uſed by the painters, is much like that of true *ultramarine*, tho' much leſs valued.

To make Ultramarine.

Pour five ounces of linſeed-oil into an earthen diſh, with three or four drops of water, ſet it on the fire, and let it ſtand 'till it begins to fry or boil; and then put in half a poundof *white Virgin wax*, broken into ſmall bits. When the wax is melted, put in half a pound of *Greek* pitch, and two ounces of powder of *maſtich*, which has been before melted by itſelf, and alſo an ounce of *turpentine*; let all together ſtand over the fire to melt for an hour.

Afterwards pour this compoſition into cold water, and if it proves ſoft like butter, it is enough; but if you feel any hard grains or grit, conclude that the *maſtich* has not been melted enough, therefore ſet it over the fire again.

When the whole is brought to a due temper; put blue *lapis* into a crucible, and ſet it into the fire 'till it is red-hot, like the fire itſelf, and then throw it into *white-wine vinegar*; which it will imbibe, or abſorb, 'till it burſts and breaks into ſmall bits. Pound theſe bits in a mortar, and then incorporate this powder with a little of the above-mentioned compoſition; but with as little, as poſſibly may be, and let it remain in this ſtate for about fourteen or fifteen days.

This being done, lay a board a little inclin'd upon the edge of a table (which board, if it had a channel or trench cut along it, would be more convenient) and under the foot of this board place a glaſs veſſel or receiver, and put the blue paſte at the upper part of it, and a veſſel of water over that, ſo that it may diſtil drop by drop upon the paſte.

Having diſpos'd all things in this manner, help the water to dilute the paſte, by ſtirring it very gently with the ſmall end of a ſmooth ſtick.

The firſt blue, which will come away drop by drop, will prove the fineſt; and when you perceive that it begins to loſe part of its beauty, change the veſſel that receives it, and this will be a ſecond blue; and you may likewiſe by thus changing the receiver have a third ſort, which you may uſe.

Set theſe three ſorts of *ultramarine* to dry, then put them up ſeparately in bags of white leather.

Another way of making Ultramarine.

Take a quarter of a pound of *lapis lazuli*, and lay it upon burning coals, letting it lie 'till it is red-hot, and then quench it in very ſtrong vinegar.

After this has been done, grind upon a hard marble ſtone with rectified brandy; the more it is ground, the finer the *ultramarine* will be. When it has been thoroughly ground, leave it upon the marble, or you may put it up in a veſſel, while you prepare a paſte, or paſtel, for the incorporating the *lapis* with.

In order to make this paſte, take two ounces of *yellow wax*, two ounces of *turpentine*, as much *roſin*, and as much *linſeed-oil*; melt all theſe together over a ſlow fire, 'till they begin to bubble, which when it does, it is enough.

Pour this melted compoſition into glaz'd pans, and it will be your *ultramarine* paſtel or paſte, of which take a quantity proportionable to that of the *lapis*, that has been prepar'd, and knead them together upon the marble ſtone, *i. e.* both the *lapis* and paſtel together, which when they have been incorporated, leave them in that ſtate for a night.

Then in order to force the *ultramarine* out of the paſtel, pour fair water upon it, and knead it with your hands like a piece of dough, and the *ultramarine* will ſqueeze out, which is to be receiv'd into an earthen veſſel ſet under your hands; then leave it to ſettle in the ſaid water, 'till you perceive the *ultramarine* has ſunk to the bottom.

Another way. Take *linſeed-oil*, *new wax*, and *arganſon*, of each two ounces; *roſin*, and *maſtich* in tears, of each half an ounce; *Burgundy pitch* two ounces; incenſe of *frankincenſe* one drachm, of *dragon's-blood* the ſame quantity; let each of theſe ingredients be bruiſed in a mortar by themſelves; then ſet the linſeed-oil over the fire in a pan, and when it begins to fry, put in the ingredients one after another, letting the *dragon's-blood* be put in laſt; ſtirring the others continually with a ſtick, or *ſpatula*, and when you perceive the compoſition to become glutinous and ſtringy to your fingers, the paſte is fit for uſe.

Then having prepar'd the *lapis lazuli*, by burning it on a coal-fire, quenching it in white-wine vinegar, grinding it very fine upon a marble, and ſearcing it through a fine ſearce; incorporate it with your paſte, and let it remain in that ſtate for twenty-four hours, and then force out the *ultramarine* with ſpring-water, but be ſure not to uſe any other water, and you will have the firſt tincture, or degree of *blue*, which will be the fineſt and moſt lively of all: repeat this to the third time, and if after all the remains be put into a chymical veſſel, you may get out the gold with which the *lapis* was impregnated.

Some perſons knead the paſte at once in a veſſel of milk-warm water, into which they ſqueeze the *ultramarine*, leaving it to ſettle for twenty-four hours or more, and then pour off the water by inclination, and find the *ultramarine* at the bottom, which they ſet to dry in the ſun

Some leave the *lapis* incorporated in the paſte for the ſpace of a month, before they ſqueeze out the *ultramarine*; and in the paſte put only oil of *turpentine*, inſtead of *linſeed-oil* and *turpentine*; and black pitch inſtead of *Burgundy* pitch: and as for the *lapis* itſelf, they heat it, quench it, grind it, and ſearce it in the manner before directed.

UNANIMITY is repreſented [in *Painting*] cloth'd in a blue robe, mantle, and buskins, with a chaplet of blue lillies.

UNDAUNTEDNESS is repreſented [in *Painting*, &c.] by a vigorous youth in white and red, ſhewing his naked arms; ſeeming to ſtay for, and ſuſtain the ſhock of a bull.

His arms ſhew his confidence in his own valour, to fight the bull, which being provoked, becomes fierce, and requires a deſperate force to reſiſt him; for undauntedneſs is the exceſs of bravery and ſtoutneſs; and we call a man undaunted, when, for ends propoſed to himſelf, he fears not what others uſually fear.

CIVIL UNION, a woman of a chearful pleaſant countenance, holding an olive-branch in one hand, encircled with myrtle, the fiſh *ſcarus* in the other.

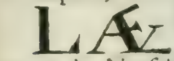
The olive and myrtle ſignify the pleaſure taken in the amicable correſpondence of citizens, for thoſe trees are naturally and mutually joined, ſo ought citizens to embrace each other. The fiſh mutual love, for if one of them ſwallows the hook, the others haſten to bite the line aſunder.

UNQUIET LIFE is repreſented [in *Painting*, &c.] by *Siſyphus* rolling a huge ſtone to the top of a mountain, which ſtill falls back again.

The mountain denotes the life of man; the top of it, the quietneſs and tranquillity to which we aſpire; the ſtone, the great pains every one takes to arrive at it. *Siſyphus* ſignifies the mind, which always breathes after reſt, and ſcarce has obtained it, but deſires ſtill; for ſome place it in riches, ſome in honours, ſome in learning; this in health, that in reputation; ſo that it is found only by accident.

VOLUPIA, the goddeſs of pleaſure, was depicted as a lady of a pale and lean countenance, ſitting in a pontifical and majeſtick chair, embroidered and emboſſed with ſtars of gold, treading and trampling upon virtue.

F. DE VORSTERMAN was a diſciple of *Harman Sachtleven*, and an extraordinary curious and neat landskip-painter in little, in which he may very reaſonably be ſaid to have exceeded all the painters of his time. He performed his landskips with wonderful care and neatneſs after the *Dutch* goût. He ſpar'd no pains in his views, which commonly repreſent places on the *Rhine*; where he had ſtudied and accuſtomed himſelf to take in a large extent of hills and diſtance. The extravagant prices he demanded for his pictures hindred him often from being employ'd by king *Charles* II. who was pleaſed with his manner of painting; eſpecially that piece he made of *Windſor-caſtle*, now extant in the royal collection. He accompanied Sir *William Soames*, ſent by king *James* II. on an embaſſy to *Conſtantinople*; but upon that miniſter's death he return'd to *France*, and died. His deſign in going for *Turky*, was to draw all the remarkable views in that empire; but he was diſappointed by his patron's death, without whoſe protection he durſt not attempt it, to the great regret of all lovers of art.



LUKE VORSTERMAN painter and engraver of *Antwerp*, was adviſed by *Peter Paul Rubens* to apply himſelf to engraving; he engrav'd the works of the ſaid *Rubens*, as alſo thoſe of *Raphael* and *Vandyke*.

MARTIN DE VOS, born in the year 1540, ſtudied in *Italy*, liv'd at *Antwerp*, excell'd in hiſtory, died in 1604, aged 64.

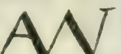
SIMON VOUET born in 1582, learn'd of his father. He liv'd at *Venice*, *Rome*, and *Paris*, excell'd in hiſtory and portraits, died in the year 41, aged 59 years.

V. P. or } were four marks uſed by *John Sebald Beham*,
B or P. or } when he did not care to put his own name.
J. S. P. }

URANIA is repreſented [in *Painting*,] cloth'd in a mantle of *azure*, fill'd with lamps.

V. S. 1622 ſtands for *Valentine Sezenius*, the ſame mark was alſo uſed by *Virgilio Sole*.

V. S. I. ſignifies *Ventura Salembini* of *Sienna*, painter and inventor.



ANTHONY VAN VUATERL, i.e. *Anthony van Vuaterl* inventor, is found in certain landskips and ſolitudes; it is ſometimes join'd with the firſt of the three marks that follow the next, *i.e.* H. S. P. made in one.

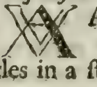
VULCAN is repreſented [in *Painting*, &c.] ſtanding by a ſmith's forge, and hammering on an anvil on mount *Ætna*, making thunderbolts for *Jupiter*, and arrows for the god of love.

The opinions which the ancients had of Vulcan *were various, and accordingly he is variouſly repreſented ſome times in one manner, and ſometimes in another.*

Some repreſent him lame of one leg, and in a ſcarlet robe, of a very black and ſwarthy complexion, as it were all ſmoaky; of a general ill-ſhap'd proportion in all his lineaments; and becauſe he is the husband of *Venus*, ſhe is ſometimes painted with him.

Alexander Neapolitanus writes, that *Vulcan* had a ſtatue erected to him in a certain place in *Egypt*, holding in one hand a mole, and in the other a thunderbolt.

The mole ſignifies he ſent (as they imagined) an unſpeakable number of moles among them, as a plague to them, which gnaw'd and deſtroy'd every thing that was good.



ANTONY VUORMACE a *Painter* of *Cologne*, liv'd in the year 1529, he engrav'd the twelve apoſtles in a ſtanding poſture, and uſed this mark.

W.

To make ſealing WAFERS.

TAke very fine flower, mix it with glair of eggs, iſing-glaſs, and a little yeaſt; mingle the materials, beat them well together, ſpread the batter, being made thin with gum-water, on even tin-plates, and dry them in a ſtove, then cut them out for uſe.

You may make them of what colours you pleaſe, by tinging the paſte with *Brazile* or *Vermilion* for *red*; *Indigo* or *Verditer*, &c. for *blue*; *Saffron*, *Turmerick*, or *Gambooge*, &c. for *yellow*.

To put WALKS *with rows of trees in perſpective.*

If only a ſingle row of trees on each ſide be requir'd, there is no need for making a plan of ſquares or chequers.

But where a number of *walks* are to be ſhewn, we think it adviſable to form a plan in occult lines with trees, and from the diagonals of the little ſquares formed thereby, to erect perpendiculars, as is ſhewn in A. B.

If you deſire to have the trees further or leſs apart, increaſe or diminiſh their diſtances of the ſquares on the baſe-line; when you have given the ſtem of the firſt tree its proper height, as A. C. draw a line from G to the point of ſight D. which ray C. D. is to bound the ſtems of all the other trees.

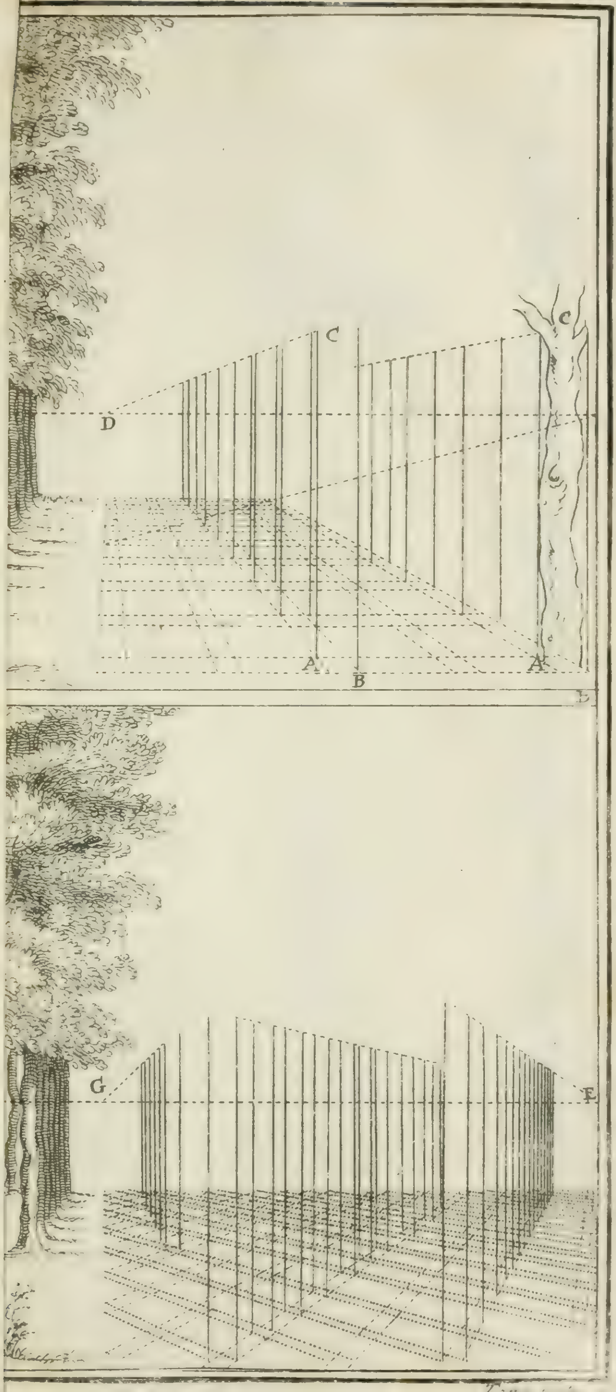
The firſt tree A. B. ſhews that you may give them what turn or form you pleaſe between the 2 right lines; and that they are not to be drawn with the ſtraitneſs of a ruler.

The figure underneath is perform'd as that above; all the difference is, that the ſquares of the upper are direct or in front; and thoſe of the under viewed angle-wiſe: whence the meaſures on the baſe line in the latter caſe, muſt be all drawn to the points of diſtance E and F perpendiculars to be rais'd from the little ſquares, and the reſt as above.

In the ſame perſpective where *walks* are drawn to the points of diſtance, one may add others drawn from the points of ſight. Thus the middle *walks* tends to the point G. which is the point of ſight, and the others to the points E F. which are thoſe of diſtance.

To make a WALNUT-*grain on* WOOD.

Spread on it thin 7 or 8 lays of ſtrong glue one after another, each being firſt dry'd, and it will become ſhining; then wet a bruſh or pencil in common water, and form the knots or other


C
C
D
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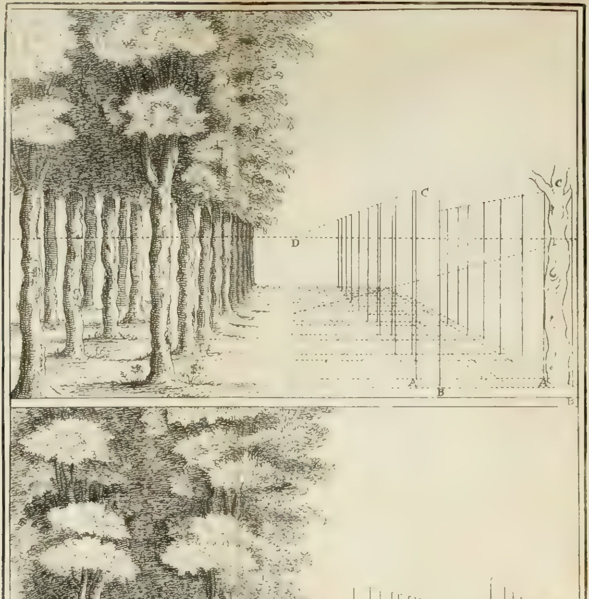
B
G
E


B
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E

ſtrokes in the glue whilſt warm, and ſo ſtrike hard on it with a wooden bruſh, and lay another laying of glue and poliſh it.

To make wood of the colour of WALNUT-TREE.

Dry the peels of walnuts in the ſun, boil them in nut-oil, and rub the wood over with it.

WARLIKE STRATAGEMS are repreſented in [*Painting*, &c.] by a man in armour; a rapier by his ſide, a ſhield on his left arm, and a frog engraven on it, with a piece of reed againſt his jaws, over againſt a ſerpent going to devour him, on one ſide a leopard; over his helmet a dolphin.

Armed, becauſe he ought to be upon his guard. The dolphin was the badge of *Ulyſſes*, the author of ſtratagems, he bore it in memory of a dolphin's having ſaved his ſon. The frog denotes prudence, by holding a reed croſs its mouth; for knowing her ſelf inferiour in ſtrength, the hydra cannot ſwallow her, having the reed croſs-ways.

To WASH COLOURS.

Put the colour into a glaz'd veſſel, and put fair water to it plentifully, waſh it well, and decant (after a while) the water, do this 6 or 7 times; at laſt put the water (being juſt troubled) into another glaz'd veſſel, leaving the dregs at the bottom; then into this ſecond veſſel put more fair water, waſhing it as before, till the water (being ſettled) be clear, and the colour remain fine at the bottom.

Before you take the colour out of the veſſel, ſpread it very thin about the ſides thereof, and when it is dry, ſome of it will fall to the bottom, which keep by it ſelf; but the remainder which ſticks to the ſides of the baſon is the beſt of all, which with a feather ſtrike off from the ſides of the veſſel, for it will be finer than any flower.

STEEPING *of* COLOURS.

Take a quantity of the colour and put it into a ſhell, and fill the ſhell with fair water, to which add ſome fine powder of alum, to raiſe the colour; let it thus ſteep a day and night, and you will have a good colour.

Where note, ſaffron ſteep'd in vinegar gives a good colour, and the *Venice* berries in fair water and a little alum, or a drop or two of oil of vitriol, makes a fair yellow.

But ſome colours are to be boil'd, as *Brazile*, *logwood*, *turnſole*, *rinds of wallnuts*, *wood-ſoot*, &c. theſe when boil'd are to be kept cloſe ſtopp'd in glaſſes, till you have occaſion to uſe them.

To make WASH-BALLS.

Take a pound of white cake *ſoap*, ſcrape it, and pound it well in a mortar, take out the crumbles that are not well incorporated, and put in a pound of ſtarch well powder'd, and an ounce of the eſſence of *orange*, half a pint of macanet water prepar'd; ſtir them gently with a peſtle, then pound them till they are all well mixed, make the paſte up into balls, and let them dry.

Waſh-Balls of NEROLI.

Take 4 pounds of cake-ſoap well cleans'd, ſcrape it and put to it as much of roſe or orange-flower water as will temper it, ſtirring it twice a day, that it may ſoak the better, then pound it well and put in half a pound of *Labdanum* in powder, and an ounce of *Neroli*, mix them into a paſte and ſo make them up into balls.

Waſh-Balls of BOLOGNA

Take three bundles or boxes of theſe balls, pound them and dip them in as much angel-water as will wet them, then add half a pint of *Benjamin* water, and of the paſte make 2 equal cakes by pounding them well; then beat 2 drachms of musk or civet very ſmall, and 2 ounces of balm of *Peru* dropp'd in by degrees; add to theſe the groſs eſſence of *Amber*, and ſome eſſence of *Cloves* and *Cinnamon*; mix theſe with the paſte, make it into balls, and keep it for a very curious perfume.

In this nature other waſh-balls or paſte may be made, and perfumed with various ſcents.

WASHING [in *Painting*,] is when a deſign drawn with a pen or crayon has ſome one colour laid over it with a pencil, as *Indian ink*, *biſtre*, or the like, to make it appear the more natural, by adding the ſhadows of prominences, apertures, *&c.* and by imitating the particular matters whereof the thing is ſuppoſed to conſiſt.

Thus they waſh with a pale *red*, to imitate brick and tiles; with a pale *Indian blue*, to imitate water and ſlate; with green, for trees and meadows; with ſaffron or *French berries*, for gold and braſs; and with ſeveral colours for marbles.

Theſe waſhes are uſually given in equal teints or degrees throughout, which are afterwards brought down and ſoftened over the lights with a fair water, and ſtrengthened with deeper colours for the ſhadows.

WASHINGS. } [with *Goldſmiths*, &c.] are the lotions,
WASHES. } whereby they draw the particles of *gold* and *ſilver* out of the aſhes, earths, ſweepings, *&c.*

This is either performed by ſimple *waſhing* them again, or by putting them in the *waſhing mill.*

To make one of theſe waſhes, they not only gather together the aſhes of the furnaces, and the ſweepings of the places where the works are, but they alſo break and pound the old earthen crucibles, and the very bricks whereof the furnaces are built; little particles of gold, *&c.* being found to ſtick to them, by the crackling natural to thoſe metals, when in their laſt degree of heat.

Theſe matters being all well ground and mixed together, are put into large wooden bowls, where they are waſhed ſeveral times and in ſeveral waters, which run off by inclination into ſeveral troughs underneath, carrying with them the earth and the inſenſible particles of the metals, and only leaving behind them the larger and more conſiderable ones, which are viſible to the eye, and taken out with the hand, without more trouble.

To get out the finer parts, which are gone out with the earth, they uſe quickſilver, and a *waſhing mill*.

This *mill* conſiſts of a large wooden trough, at the bottom of which are two metalline parts, ſerving as mill-ſtones; the lower being convex, and the upper, which is in the form of a croſs, concave

At the top is a *winch* placed horizontally, which turns the upper piece round; and at the bottom a bung to let out the water and earth, when ſufficiently ground.

To have a *waſh* then, the trough is filled with common water, into which they caſt 30 or 40 pound of quickſilver, and 2 or 3 gallons of matter remaining of the firſt lotion.

Then turning the winch, they give motion to the upper part of the mill, which grinding the matter and the *Quickſilver* violently together, the particles of the gold and ſilver become the more eaſily amalgamated therewith: this work they continue for 4 hours; when opening the bung, the water and earths run out, and a freſh quantity is put in.

The earths are uſually paſſed thus through the mill 3 times, and the ſame quantity of *mercury* uſually ſerves all the 3 times. When there is nothing left in the mill but the mercury united with the *gold* and *ſilver* which it has amalgamated, they take it out, and waſhing it in divers waters, they put it into a ticking bag, and put it in a preſs to ſqueeze out the water, and the looſe *Quickſilver*; the remaining *Quickſilver* they evaporate by fire in a retort, *&c.*

Of WASHING MAPS, PICTURES, *&c.*

By waſhing is intended nothing elſe, but the ſetting out either maps or pictures in proper colours.

1. The inſtruments and materials us'd in waſhing are chiefly theſe few following. 1. *Alum-water.* 2. *Size* or *gum-water.* 3. *Liquid gold or ſilver.* 4. Pencils. 5. Colours.

2. *To make alum-water*, diſſolve 4 ounces of alum in a pint of fair water, boiling them till the alum is diſſolv'd; or thus, to 2 quarts of ſpring or well water, put half a pound of *Roch-alum* poudered, diſſolve it well by boiling, filtre it through brown paper, and keep it for uſe.

Wet your paper with this water before you lay on any colours, and it will prevent them from ſinking in; and it will beſides add a luſtre and beauty to the colours laid on.

But you muſt take notice of this; that if the paper is not good, it muſt be waſhed over 4 or 5 times with a large bruſh or pencil.

And likewiſe remember this; that *alum* raiſes ſtaining colours, and preſerves them from fading.

To make ſize. Steep glue all night in water, and the next morning melt it over the fire, making it neither too ſtrong nor too weak; then let it cool a little and if it be too ſtiff when cold, add a little water to it, and if it be too weak, put in more glue, and uſe it luke-warm.

To make gum-water. Put a quart of pure ſpring-water into a jar-glaſs, and hang in it, ty'd up in a fine woollen rag, a ſufficient quantity of pure white *gum-arabick* bruiſed. Let it hang till the *gum* is diſſolved; put your fingers into the water, and if you find them to ſtick together as if they were glued, your water is too ſtrong, or full of the gum; and therefore you muſt put more fair water to it; and if you find it too weak, you muſt put in more gum.

1. With this water, or the former ſize, moſt of the colours are to be tempered, and with ſo much of the gum-water as that it being touch'd when dry, the colour will not come off, and if the colour gliſter, there is too much gum in it.

Your pencils muſt be of all ſorts, both fitched and pointed; and beſides theſe, a large bruſh for paſting of paper upon cloth; and another for wetting the paper with *alum-water*; and a third for ſtarching the face of the picture with, before it is coloured; and a fourth for varniſhing with.

The colours are,

1. *Red*, *Braſile*, turnſole, *Indian-lake*, cinnabar, vermilion, red-lead, cochineal, *Indian* cakes, roſſet.

2. *Yellows*, yellow-berries, gambooge, aloes, ſaffron, orpiment, maſticote.

3. *Greens*, ſap-green, verditer, green-bice, verdigreaſe.

4. *Blues*, litmoſe, indigo, logwood, blue-bice, ſmall-indigo, logwod, ultramarine.

5. *Browns*, *Spaniſh*-brown, umber, wood-ſoot, rinds of green walnuts, walnut-tree leaves.

6. *Blacks*, lamp-black, ivory-black, printers-black, common ink, hartſhorn-black

7. *Whites*, flake-white, *Spaniſh*-white.

Some of theſe colours are to be ſteep'd, as aloes, gambooge, ſap-green, yellow-berries, verdegreaſe, *Indian* cakes, ſaffron and wood-ſoot.

Some are to be boil'd, as *Braſile*, *logwood*, *turnſole*, *green walnut-rinds*, *wood-ſoot*, *bice*, *red-lead*, *roſſet*.

Some are to be waſhed, as *Spaniſh*-brown, orpiment and verditer.

Some are to be burnt, as umber, printers-black, *Spaniſh*-brown, lamp-black, ivory-black, and theſe are afterwards to be ground.

Some are to be ground, as cinnabar, vermilion, *Indian*-lake, white-lead, *Spaniſh*-white, maſticote.

Simple colours for WASHING.

Aloes. This makes a deep or ſad kind of yellow colour, according to the goodneſs of the *aloes*, and is to be diſſolved in a weak gum-water.

Blue bice, is an excellent blue, waſhed and tempered with gum-water; there are of it ſeveral ſorts, ſome lighter, and ſome ſadder.

Blue bice, *verditer*, *and ſmalt*, ground ſingular with gum-water (or together) make a good *blue*.

Green bice waſhed and tempered with gum-water, makes a good but not tranſparent green.

Spaniſh-brown burnt, ground, and tempered with gum-water, makes a reddiſh brown, or liver-colour.

Ceruſe, ground or mixt with gum-water, makes an excellent white.

Native cinnabar muſt be ground like red-lead, and is a glorious red colour, much exceeding the artificial.

To make Ceruſe according to Glauber.

This colour is made with *Venus* (or copper) in vinegar in an earthen pot ſet in horſe-dung; but if you diſſolve your *Saturn*, (i. e. lead) with ſpirit of *nitre*, and precipitate with ſalt water, you will have a *ceruſe* whiter and purer than ordinary, and much better for painting.

Cochineal ſteep'd makes a fair tranſparent purple; do thus, put *cochineal* into the ſtronger ſoap-lees, and it will make a fair purple colour, which may be lightened or deepened at pleaſure.

It will alſo make a tranſparent purple, being ſteeped in ſtrong vinegar.

Yellow fuſtick-berry being either boiled in water, or ſteeped in alum-water, makes a good and tranſparent yellow.

Flory-blue muſt be ground with the glair of eggs, to which, if you afterwards add a little roſſet, it makes a light violet-blue; and with white and red lead it makes a crane-feather colour.

Gambooge diſſolv'd in fair ſpring-water, will make a beautiful and tranſparent *yellow*; and if you would have it ſtronger, diſſolve ſome *alum* in it; it is good for ſilk, linen, white leather, paper, parchment, vellum, quills, *&c.* This colour delights in no mixtures.

Indigo, ground and temper'd with gum-water, makes a deep blue, and is fit to ſhadow all other blues.

Indian-lake ground with gum-*Arabick* water, makes a glorious murrey; in grinding it, add a little ſugar-candy; ſome ſay it makes a deep pink, or bloom-colour.

Indian-cakes are to be uſed after the ſame manner as *turnſole*; they make a good tranſparent red colour: put ſome gum into the liquor to bind it.

Ivory-black, burn, grind, and temper it with gum-water, and it will make a very good *black*.

Lamp-black, } burn, grind, and temper them with gum-
Printers black, } water, and they'll make a good black.

Red-lead, grind with a ſtiff gum-water, and a little ſaffron being added, it will make it orient.

Flake-lead, or *flake-white*, ground and tempered with gum-water, is an excellent *white*.

Litmoſe, cut into ſmall pieces, and ſteep'd for a day or two in weak *gum-lake* water, will make a pure tranſparent blue to waſh with.

Logwood, ground and boiled as *Brazile* makes a very fair tranſparent violet, or purple-colour.

Madder. Boil 4 drachms of madder with an ounce of *Brazile*, in a quart of rain-water, boil away a third part, then put in half an ounce of *alum*, and boil it to a pint; add an ounce of *gum-Arabick*, boiling it till it is diſſolv'd; cool it, ſtirring it often, and ſtrain it for uſe. It is a good ſcarlet-dye for leather.

Maſticote, grind it and temper it with gum-water, and it will make a good *yellow*, but not tranſparent.

Orpiment, waſh it, put to it gum-water; it makes a good orient, or gold-colour: there are ſeveral degrees of it, ſome more red, others more yellow.

Roſſet, waſh it, and temper it with gum-water, and it will be much of the ſame colour as *Indian-lake*, but it will ſoon fade and grow lighter; but being tempered with *Brazile*-water, will be deeper.

Sap-green, ſteep'd all night in ſharp vinegar, and a little alum added to it to raiſe its colour, it makes a good *green* to ſhadow with.

Saffron, ſteep'd in vinegar and mix'd with gum-water, makes a good yellow. In white-wine or ſack it does the ſame; but mixt with equal parts of cochineal, it makes a more glorious one. It may alſo be ſteep'd in glair of eggs, or ground with vermilion.

Smalt, ground with a little fine roſſet, makes a deep *violet*.

Wood-ſoot, boil'd in water and ſtrain'd, and gum-*Arabick* put to it to bind it, makes an excellent colour to expreſs high-ways, lanes, *&c.*

Spaniſh-white, ground and tempered with gum-water, makes the beſt of all whites.

Turnſole, ſet it over a gentle fire in ſharp vinegar, till it boils, and is coloured, then take it out and ſqueeze it into the vinegar; diſſolve in it a little gum-*Arabick*, it will make a good ſhadow, or *carnation*, or *yellow*.

Verditer, waſh it and temper it with gum-water, and it will be a good *blue*, but not tranſparent, or inclining to green.

Verdegreaſe, grind an ounce of verdegreaſe very finely, put to it a good quantity of common varniſh, and as much oil of turpentine as will make it thin enough to work withal; and it will be a good green.

Fine *verdegreaſe* being diſſolved in *Rheniſh*-wine, makes a tranſparent green, inclining to blue.

Being ground with juice of *rue* and gum-water, it is a pure green; without the juice it makes a glorious emerald.

Verdegreaſe mixt with cryſtals of *tartar* in white-wine vinegar, in which *gum-Arabick* has been diſſolved, makes a pure *green*.

Verdegreaſe, boil 2 drams of it with 2 drams of *alum*, and 6 drams of *logwood*, in vinegar, and it will make a good murrey.

Ultramarine, grind it with *litmoſe*-water, if you would have it very deep.

Umber, burn it, grind it, and temper it with gum-water, and it will make a good haw-colour; and be very good to ſhadow with, upon gold.

Green of walnuts, boil them in walnuts, ſtrain them, diſſolve gum-*Arabick* in the liquor, and it will be an excellent colour to expreſs high-ways, lanes, *&c.*

Of compounded colours for WASHING *of* MAPS.

A blue to waſh upon paper.

Take half an ounce of the beſt *azure*, of kermes, one ounce; mix them and temper them with gum-water, and it will be a glorious *blue*.

A Venice blue.

Make quick-lime into a paſte with ſtrong vinegar, and half an hour after, put more vinegar to ſoften it, then add to it an ounce of *indigo* finely powdered; mix them together and digeſt them for a month or 6 weeks, in horſe-dung.

Another excellent blue.

Mix fine chalk with juice of elder-berries, full ripe; and put to it a little alum-water.

Ultramarine, blue, bice, ſmalt and verditer, ground ſingly with gum-water, or together, make a good *blue*.

To make blue ſmalt.

Take fluxible ſand, *ſal-nitre*, and *cobalt*, and mix them together.

Green, digeſt filings of *copper* in diſtill'd *vinegar*, till the vinegar is blue; ſet it in the ſun, or on a ſlow fire, till it is thick enough, and it will be a good *green*.

Or thus; take *cedar-green*, which is the beſt of all, or inſtead of that, *green bice*, ſteep it in vinegar and ſtrain it, then grind it well with fair water, and add to it a little honey, and dry it well; and when you uſe it, mix it with gum-water.

A light green; grind together juice of *rue*, *verdegreaſe*, and *ſaffron*, and uſe them with gum-water.

Or thus; ſteep *ſap-green*, *flower-de-luce*, or *tawney-green*, in water; alſo *verditer* and ceruſe, mixt with a little *copper-green*, make a good light colour.

A never-fading green. Put the juice of flower-de-luce into gum-water, and dry it in the ſun.

To make a lively yellow, diſſolve *orpiment* in gum-water, put to it a little ground *vermilion*; grind them together, and they will be a very lively colour.

Orange-colour; *red-lead* and *yellow-berries* make a good orange-colour: *or thus*; boil an ounce of *arnotto*, and 2 drams of pot-aſhes, in a quart of water, till half is boiled away; then ſtrain it and uſe it hot.

This is good for paper, parchment, vellum, white leather, quills, *&c.*

Fleſh-colour. Mix *white Indian-lake*, and *red-lead*, (according as you would have it, light or deep) and to diſtinguiſh a man's fleſh from a woman's, mingle a little oker with it.

Brown. *Ceruſe*, *red-lead* and *Engliſh-oker*, and *pink*, make a good *brown*.

Spaniſh-brown. This not being calcin'd, is a dirty colour; but yet is proper for a horſe, dog, *&c.* but to ſhadow *vermilion*, or to lay upon any dark ground, behind a picture, or to ſhade berries in the darkeſt places, or to colour wooden poſts, wainſcot, trees, *&c.* (being burnt) is very good.

Colours of ſtones. *Verdegreaſe*, with varniſh, makes an *emerald*; with *Florence*-lake, a *ruby*; with *ultramarine*, a *ſapphire*.

Of mixing colours and ſhadowing.

1. Take care in mixing colours, not to make them too deep; neither take pencils out of one colour, to put into another, without waſhing it.

2. In mixing colours, ſtir them well ſeparately, before you mix them, and afterwards put them together, making them lighter or deeper, at pleaſure.

3. Garments are ſhadowed with their own proper colours, or the colours may be mix'd with white for the light parts, and they may be ſhadowed with the ſame colour unmix'd; or you

may uſe the thinneſt of the colour for the lighteſt parts, and ſhadow with the thickeſt, or bottom of your colour.

Green is ſhadowed with *indigo* and *yellow-berries*; *blue* is ſhadowed with *indigo*, *litmoſe*, and *flory*; any of them ſteep'd in the lees of ſoap-aſhes, and us'd with gum-water.

Yellow is ſhadowed (if it be made with yellow-berries) with *umber*; but for beauty's ſake, with red-lead; and the darkeſt touches with *Spaniſh-brown*; and for variety, with *copper-green*, *blue-bice*, or *verditer*.

All light colours are ſhadowed with colours of the ſame nature; but ſadder, as for example, *vermilion*, is ſhadowed with *lake*, or *Spaniſh-brown*; *verditer* and *bice* are ſhadowed with indigo.

Sap-green is uſed only to ſhadow other greens with, and is not to be laid for a ground in any garment.

Lake ſhould not be ſhaded with any other colour, for it is a dark red; yet for variety ſake, you may ſhadow it with *bice* or blue *verditer*, which will make it like a changeable taffeta.

Blues ſet off with *yellows*, *reds*, *whites*, *browns*, and *blacks*.

Greens ſet off well with *purples* and *reds*.

Gambooge and yellow-berries are ſhadowed with *umber*, *red-lead*, or *vermilion*.

Red-lead is ſhadowed with lake or *Spaniſh-brown*

White ſets off very well with *blues* and *blacks*.

Yellows ſet off very well with *reds*, *ſad-blues*, *browns*, *greens*, and *purple*.

Verdegreaſe is ſhadowed with *indigo* mixt with *yellow-berry* water.

Spaniſh-brown is ſhadowed with burnt *umber*, and with *Braſile*-water.

Umber is ſhadowed with *umber* burnt.

Roſſet and *Braſile* are ſhadowed with *Spaniſh-brown*, mix'd with *Braſile*-water.

Red-lead is ſhadowed with *lake* or *Spaniſh-brown*.

Maſticote is ſhadowed with red orpiment.

Wood-ſoot and *walnut-ſhells* are ſhadowed with *umber*.

From the variety of the mixtures of the before-mentioned colours, infinite varieties almoſt may ariſe.

For *compound orange-colour*, mix *Braſile*-water with *yellow-berry* water, of a tranſparent colour.

For a compound blue, mix *litmoſe*-water with *yellow-berry* water, and it will make a tranſparent ſad blue; which you may heighten or deepen, at pleaſure.

A compound green. Mix *verdegreaſe*-water with *yellow-berry* water, and it will be tranſparent; and this may be made either deeper or higher, according to the proportion you take of either.

Infinite other varieties you will find out by practice.

Colours for waſhing LANDSKIPS.

1. Grind *pink*, *bice*, *ſmalt*, *maſticote*, or *indigo*, mixt with *white*; or *blue verditer* mixt with *yellow-berries*; theſe make good greens for landskips.

2. Uſe *burnt umber* for the *ſaddeſt hills*; and add yellow to the burnt, for the *lighteſt*; lay *copper-green* thickned, on the fire, or in the ſun, for other *hills*.

3. For the next *hills farther off*, mix *yellow-berries* with *copper-green*; let the fourth part be done with *green verditer*, and the fartheſt and fainteſt places with *blue bice*, or *blue verditer* mixt together, and ſhadowed with *blue verditer*, in the ſhadows indifferent thick.

4. Do the high-ways with *red* and *white-lead*, and to make ſome variety, with *yellow oker*; ſhadow with *burnt umber*, which may alſo be uſed for ſandy rocks and hills.

5. Alſo make rocks of ſeveral colours; in ſome places with black and white; and in other places with red and white; and in other places, with blue and white, *&c.*

6. Water is to be made with *black verditer*, and *white*, when the banks caſt a green ſhadow upon the water, and the water is dark ſhadowed, then ſhade it with *indigo green* thickned, and blue *verditer*.

7. Colour *buildings* with as much variety of pleaſant colours, as ſhall be agreeable to reaſon.

8. You may ſometimes uſe white and black for a *wall*, *conduit*, &c. and red-lead, for *brick*-houſes, *&c.*

9. If many houſes ſtand together, you may waſh them of different colours; as with *umber*, and *white*, *lake* and *white*, *red-lead*, and *white*, &c.

10. For the *loweſt and lighteſt places* of a *sky*, uſe *maſticote*, or yellow-*berries*, and *white*; for the next degree, *red*, *roſſet*, and *white*; for *the other*, blue *bice*, and *white*; and for the *higheſt*, *blue bice*, or *blue verditer*.

Theſe degrees and colours muſt be ſo wrought together, that there may be no ſharpneſs upon the edge of any of them, or ſo that it cannot be perceiv'd where you began to lay them on, they being ſo drowned, one in another.

Of the practice of WASHING.

Wet your pictures that you are to colour over, with *alum*-water, for that will prevent the colours from ſinking in, and will alſo add a luſtre to them; and not only make them appear fairer, but alſo keep them from fading.

2. Let the paper (thus waſh'd with *alum-water*) dry of it ſelf, before you lay the colours on; or before you wet it a ſecond or third time: for ſome paper will require wetting 4 or 5 times.

3. This waſhing of the paper with the *alum*-water, is to be done with a large pencil-bruſh.

4. But if the pictures are deſign'd to be varniſhed after they have been coloured, inſtead of the *alum*-water, it will be beſt to ſize them with new ſize, made of good white ſtarch; do this with a very fine bruſh, and you muſt be very exact, in doing it all over, for if there be any place left undone, the varniſh will ſink through.

5. The pictures, *&c.* being thus prepar'd, you may proceed to the laying on the colours, according to direction, ſuiting them to the life of every thing, as nearly as you poſſibly can.

6. Having painted the picture, you may ſize it over as is before directed. Paſte maps or pictures upon cloth thus; wet the ſheet of cloth in the ſize, wring it out and ſtrain it upon a frame, or nail it to a wall, and ſo paſte the maps or pictures upon it.

7. If you intend to varniſh your pictures, *&c.* having thus fix'd it in a proper frame, varniſh it with a proper varniſh. See VARNISH.

As for tempering the Colours, do as follows.

1. As for ſuch colours as are ground in fair water, put a little of them into a horſe muſcle-ſhell, with ſome gum-water, and bruiſe it with your finger againſt the ſhell, to ſoften and temper it, till you find no knobs undiſſolved, and then ſtroke down the colour to the bottom of the ſhell from the ſides, with a ſmall bruſh, and then it will be fit for uſe; and if it be too thick, you may add more gum-water to it.

2. As for thoſe colours that are waſh'd, they are to be tempered after the ſame manner as the former.

3. Such as are ſteep'd, the liquor only of them is to be uſed, without any other preparation.

How to lay on the Colours.

Provide your ſelf with pencils of ſeveral ſizes, have by you a cup or gallipot of fair water, to waſh your pencils, and a clean cloth to wipe them, if you take them out of one colour, to put into another.

In chuſing pencils, take ſuch as are fulleſt next the quill, leſſening gradually to a ſharp point, which you ſhould try by wetting them in your mouth, and drawing them once or twice through your lips. If you perceive in your pencils any ſtraggling looſe hairs, ſinge them off with a candle.

If you would lay any colour about the edges of your map, *&c.* or plan of a ſurveying of any field, or piece of ground, with yellow:

Take a little yellow in your pencil, and draw the colour along of an equal breadth, on the inſide of the black-lead line.

WATCHFULNESS, is repreſented [*in Painting*] in a yellow robe, a ſable mantle fring'd with ſilver, and ſeeded with waking eyes; and a chaplet of *turnſole*; holding in her right hand, a lamp, and in her left, a bell.

To LIMN WATERS *and* FISH.

Do *Water* at a diſtance with white and *indigo*, ſhaded with *indigo* mixt with *bice*, and heighten'd with white; if near the horizon, much like the sky.

Waters that are near are to be laid with ſtronger *indigo*, heightened and ſhadowed with the ſame, mix'd with *bice*, and laſtly heightened with pure *white*.

Waters nearer with ſtronger *indigo*, ſhaded and heightened as before.

Waters and fields overflown, with *pink* and the like, always imitating nature.

Fiſh in green waters with *indigo*, mixt with *French*-berry yellow, ſhaded with a thin *Indian-blue*, and heightened with pure white.

But fiſhes are to be done according to their nature and colour; for ſome are yellow, ſome brown, ſome ſpeckled, ſome griſled, ſome black, &c. *in all which, to keep in figure the true idea, you ought to take directions only by the life.*

A WATER *that will give light in a dark night.*

Take *glow-worms*, pound them and put them into a glaſs vial, which cloſe up and ſet in hot horſe-dung for 15 days; after which, diſtil it in a glaſs alembick, and put the water that ſhall come from it into a cryſtal vial, and it will give ſo great light, that you may ſee to read by it.

A WATER *to make a light in a chamber by night.*

Put unſlaked lime in water, leaving it there till it is clear, then put it in a vial; ſet it in a chamber, and you will ſee great light.

WATERING STUFFS.

Take a ſufficient quantity of water, and gum-tragacanth an ounce; diſſolve it in the water, making a clear thin water; then wet 10 yards of *ſtuff* with the ſame water hot, all over, and put it into a preſs; let it lie a pretty while, and turn it twice; after this, ſqueeze the preſs pretty hard, and ſo let it ſtand till it is cold.

This gum-water ought to be pure, thin and clear, otherwiſe the folds of the ſtuff will ſtick together; it muſt alſo be done very hot, elſe it will not penetrate; and the ſtuff, *&c.* is to be thoroughly wet therewith, yet not too wet.

What ſort of WATER *is beſt to dye with.*

It is common to uſe running, or river-water, either of great rivers or rivulets, for the leſs valuable ſtuffs and dyes.

But it is very well worthy of obſervation, what difference there is of rivers; ſome being very clear and bright, others very thick and muddy; thoſe that are clear, are the beſt: but if the laſt are drawn out, and let ſtand to ſettle for 24 hours they are good, tho' not ſo good as the other.

In the next place it ought to be conſider'd, whether the water be hard and rough, or ſmooth and ſoft; and the proof to diſtinguiſh their quality, is very eaſily made in the boiling of vegetables; particularly peas, or lentils; by ſetting them over the fire, one part in running, or river-water, and one part in ſpring-water; and boiling them for an hour, or an hour and an half, and that pot where the peas are ſofteſt, without doubt, had the ſofteſt water.

But above all, nitrous waters are to be avoided; and if one is conſtrained to uſe them, it will be very proper to correct them as follows.

To ſoften hard or harſh WATER.

If a water is nitrous, or ſomething a-kin to the nature of lime, 'tis utterly unfit for dying; but if a perſon is conſtrain'd to uſe it, the following proceſs will rid it of all its ill qualities.

Fill a large copper with the water, and put into it 2 or 3 handfuls of wheaten-bran; then having heated a brick, or piece of plaiſter very hot, throw it into the copper, cover it very cloſe, and let it ſtand 24 hours, and then draw it off, and it will be perfectly fit for uſe.

Or, throw always a handful of wheaten-bran into the firſt ſuds, and let it boil, and you will find that it has corrected the water, and will render the ſtuffs more limber.

WATER, *with Jewellers*, is properly the colour or luſtre of diamonds and pearls; thus called, by reaſon theſe were anciently ſuppos'd to be form'd or concreted of water.

WAX is a ſoft, yellowiſh matter, whereof the bees form their cells to receive their honey.

Wax is not the excrement of the bee, as the ancients and many of the moderns have imagined.

It is properly a juice exuding out of the leaves of plants, and adhering to the ſurface of them; from off which the bees ſcrape it with their rough thighs, to build their combs with it.

It is chiefly afforded by *lavender* and *roſemary*; from which laſt any one may gather *wax*, and by the help of a microſcope, the *wax* may be plainly ſeen ſticking to the leaves of the plant.

Naturaliſts have generally imagin'd, that *wax* is gather'd from the flower; ſome from the *Petala*, and others from the *Apices*: but *Boerhaave* affirms, that it is a juice peculiar to the leaves, and not afforded by the flowers, which only yield honey.

The *wax* is a hard ſubſtance, and gathered only with the fore-legs and chaps; convey'd thence to the middle legs, and thence to the middle joint of the hind legs, where there is a ſmall cavity,

vity, like the bowl of a ſpoon, to receive it, and where it is collected into heaps, of the ſhape and ſize of lentils.

When the bee is arriv'd at his hive with his load of *wax*, it finds ſome difficulty in unburthening himſelf of ſo tenacious a matter; and frequently being unable to lay it down himſelf, he calls for aſſiſtance by a particular motion of his legs and wings: whereupon a number of his companions immediately run to his help, and each with his jaws taking off a ſmall quantity of the *wax*, others ſucceeding in their place, 'till they have quite diſburthened their loaden fellow.

There are two kinds of *wax*, *white* and *yellow*; the *yellow* is the native *wax*, juſt as it comes out of the hive, after it has been diſcharg'd of the honey, *&c.* and the *white* is the ſame *wax*, only purified, waſh'd, and expos'd to the air.

The preparation of yellow Wax.

To procure the *wax* from the combs for uſe, after the honey has been ſeparated from it, all the matter that remains is put into a large kettle, with a ſufficient quantity of water; and it being melted by a moderate fire, it is ſtrained through a linnen cloth in a preſs; and before it is cold, it is ſcumm'd with a tile, or a piece of wet wood; and while it is yet warm, caſt in wooden, earthen, or metalline moulds, they having been firſt anointed with honey, oil, or water, to prevent the *wax* from ſticking to them.

Some in purifying it make uſe of *Roman vitriol*, or *copperas*; but the true ſecret is to melt, ſcum it, *&c.* properly without any ingredients at all.

The fæces, or dregs remaining in the bag, after the bag has been preſs'd out, is us'd by ſurgeons, farriers, *&c.*

The whitening of Wax.

This whitening, or blanching of *wax*, is perform'd by reducing the yellow ſort firſt into little bits or grains, which is done by melting it, and caſting it, while hot, into cold water; or elſe by ſpreading it into very thin leaves or ſkins.

This *wax*, having been thus granulated or flatted, is expos'd to the air on linnen cloths; where it lies night and day, having equally need of ſun and dew.

Then it is melted and granulated over again ſeveral times, laying it out to the air in the intervals between the meltings.

At length the ſun and dew having perfectly blanch'd it, it is melted for the laſt time in a large kettle; and laded out of the kettle with a ladle, upon a table covered over with little round dents or cavities, of the form of the cakes of *white wax*, uſually ſold in apothecary's ſhops; thoſe moulds having been firſt wetted with cold water, that the *wax* may be got off the eaſier.

Laſtly, they lay theſe cakes out into the air for two days and two nights, to render it the more tranſparent, and drier.

This *wax* is us'd in making candles, tapers, flambeaux, torches, and for various other purpoſes.

Yellow Wax is made ſoft with *turpentine*, yet retains its natural colour.

Red Wax is only the *white* melted with *turpentine*, and made red with *vermilion*, or *orcanette*.

Burnt paper, or lamp-black, makes it *black*, and *verdigreaſe* makes it *green*.

Some travellers inform us, that there is a natural *black wax*; affirming, that there are bees both in the *Eaſt* and *Weſt-Indies*, which make an excellent honey, included in black cells. And that of this *wax* it is, that the *Indians* make thoſe little vaſes, wherein they gather their balſam of *Tolu*.

Virgin Wax, call'd alſo *Propolis*, is a ſort of reddiſh *wax* us'd by the bees to ſtop up the clefts or holes of their hives. It is apply'd, juſt as it is taken out of the hive, without any art or preparation of boiling, *&c.* it is the moſt tenacious of any, and is held good for the nerves.

Sealing WAX } Is a compoſition of *gum lacca*, melted and
Spaniſh WAX } prepar'd with roſin and chalk, and coloured red with ground *cinnabar*.

Waxen Figures for Portraits, are caſt in *moulds of plaiſter*, and coloured afterwards as the artiſt pleaſes.

It is no new invention; *Lyſiſtrates* of *Sicyone*, *Lyſippus*'s brother, *Pliny* tells us, was the firſt that thought of making moulds, even on the faces of perſons; but neither ancients nor moderns valued much thoſe, that apply'd themſelves to this ſort of work, if they were not beſides excellent ſculptors, or able painters. For there is a great deal of difference between what is made in *wax* from a model, and what is only caſt in a *mould*, and painted over.

Figures are not only made in *wax*, but all ſorts of fruits, which are painted according to their natural colours.

To caſt Figures in Wax, *Plaiſter*, *Paſte*, *Metal*, &c.

To caſt the figures of Animals.

When you have your figure ready for moulding, oil it, and take off the hollow mould in *plaiſter*, after the following manner;

Having oiled it well, lay it on potter's earth, and make choice of thoſe parts of it, moſt convenient to take off, and there make an edging, or border, of the like earth; having done this, caſt your plaiſter, well-tempered, not too thick nor too thin, and that part being well bak'd, lift it up gently, in as few pieces as you can; repair the edges, and make little notches with a knife, the edge being oiled to put them exactly together again.

After this manner, place a border or edging of the ſame earth, in the place from whence you took the part of your figure, which being done, caſt your plaiſter as before, and ſo lift up your piece to repair it: then putting it into its place, continue to do thus, 'till all is done; which being well dry'd, dreſs the outſide of the mould with a flat ſmooth piece of iron; and when it is well harden'd, mark the pieces one after another, dry it leiſurely, and join and tie them together with a ſmall cord, and ſo you will have a compleat hollow mould of plaiſter, which as the pieces are more or leſs difficult, may accordingly be made of more or leſs pieces.

How to caſt a hollow figure.

Supple the inſide of your mould of paſte, 'till it will drink in no more oil; then dry it with cotton-wool, and tie all the pieces together with ſmall cord; then look out for a convenient mouth, or caſting-place, and ſo melt your *wax*, made fine with a little *turpentine*; and when it is neither too hot nor too cold, run it into the mould; if your figure be but ſmall, fill it, and after a little time take out the ſtopple of the mouth, and ſuddenly turn the figure upſide down, that the remaining *wax* may run out; and when you perceive it is ſufficiently cold, open it, and you will have a hollow *wax* figure.

If you find it too thin, let the next remain longer in the mould; if too thick, pour out what remains ſooner; and theſe figures, when repair'd and poliſh'd, may be painted to any lively colour.

How to put an inward mould, or kernel, into any waxen figure, &c.

If your figure be of a living creature, with a moderate hot knife divide it into two parts, either lengthways or overthwart; then take potter's earth mix'd with a little fine charcoal duſt, moiſtening and beating them with a little iron rod, 'till all is well incorporated, and as ſoft as paſte, and with this paſte fill the inſide of the waxen figure; which being dry, cover the outſide of each piece, where they are to be joined with the like earth, very thin and moiſt; but take care that it does not run over the edges of the *wax*, and having join'd it, repair it with a thin piece of copper or iron warm upon the joint: then make a *git*, or caſting-hole in the moſt convenient place, and let it be long enough with breath-holes.

If you conceive any part of the figure, to which the metal will not conveniently paſs, then roll up little pieces of *wax* to the thickneſs of a gooſe-quill, or according to the ſize of the figure, which with a heated inſtrument ſtick to ſome part of it, that the end may reach the place ſuſpected, where the metal will not eaſily run, and there faſten it; then take little tags or iron about that bigneſs, and about half a finger in length, proportionable to the thickneſs of the *wax* of the innermoſt mould, and thruſt theſe quite through the figure, to the intent that the kernel, being in all parts ſupported, it may not touch or join to any part of the outward mould.

To make the caſes or facings, &c.

Take founder's earth very fine, and ſteep it in a veſſel of earth, fill'd with fair water, and by inclination pour it into another, that the droſſy part may remain behind; then add to it ſome bone, mix them well together, and with a large pencil give a ſmooth laying of the earth on the waxed figure; dry it, and do ſo ſix times; and when it has had the laſt drying, ſtrengthen it with potters clay, well mixed and beaten with hair, and that being dry, ſet the mould over the fire on iron rods, in the form of a gridiron; but take care, that the *wax* do not boil within the mould, leſt it break it. Then lean it on one ſide, that the *wax* may all run clear out at the caſting mouth; then heat the figure over a gentle fire, 'till it be well hardened, and melt the metal you intend to caſt the figure into, in a good heat, and have two crucibles in the fire, one empty to pour the metal into, that the droſs and ſcum may not remain in it.

And when it is at a proper heat, ſet the mould faſt in ſand, pour in the metal, and let it thoroughly cool; ſo by breaking your mould, you will have a perfect figure without ſcum; but if the figure be large, you muſt bind the mould with nealed wire, leſt the weight ſtrain and flaw it.

Red Sealing Wax.

Take one pound of *bees-wax*, three ounces of fine *turpentine*, one ounce and an half of *red lead* and *vermilion* finely ground, *olive-oil* an ounce, melt the *wax* and *turpentine*, and one ounce of *roſin* finely powdered; when they are well melted, and the droſs taken off, put in the *red-lead* or *vermilion*, and ſtir them well together 'till they are well incorporated; and you may, when it grows a little cool, make it up into what form you pleaſe.

To make an ordinary red ſoft ſealing Wax.

Take common *bees-wax* two pound, *turpentine* ſix ounces, *oil of olive* two ounces; melt all theſe together, then add ſix ounces of *red-lead*; boil them a little, and ſtir 'till it is almoſt cold; caſt it into fair water, and make it up into rolls or cakes.

To make fine red hard ſealing Wax.

Take pure fine *ſhell-lac*, melt it in an earthen veſſel, and put into it a ſufficient quantity of the colour you deſign the *wax* to be of. To every half pound of *gum lac*, put an ounce and an half, or two ounces, of purely fine ground *vermilion*; mix them well over the fire, and when it is of a fit coolneſs, make it up into rolls or cakes.

You may ſet a gloſs upon it, by gently heating it over a naked charcoal fire, and rubbing it with a cloth 'till it is cold.

To make the beſt red ſoft Wax.

Take white *bees-wax* two pounds, *Chio turpentine* ſix ounces, *oil of olive* ſix ounces, mix and melt them together, then add pure *vermilion* well-ground two ounces, mix and boil them a little, ſtir them 'till almoſt cold, caſt it into cold water, and then make it up into rolls or cakes.

To make black ſoft Wax.

Take *bees-wax* one pound, *turpentine* three ounces, *oil-olive* one ounce, mix and melt them together; to which mix black earth, or *lamp-black*, or *ivory-black* finely ground, one ounce, mix and melt, *&c.* as before.

To make coarſe hard ſealing Wax.

Take *ſhell-lac* ſix ounces, *roſin* ſix ounces, fine *vermilion* three ounces; melt and mix them together, and when in a due ſtate as to heat and cold, make them up into ſticks or rolls, which you may ſet a gloſs upon as before directed.

To make fine hard ſealing Wax *of other colours.*

Green ſealing Wax is made after the ſame manner, and in the ſame proportions as fine hard red ſealing *wax*, by mixing with the ingredients *verdegreaſe* inſtead of *vermilion.*

Blue ſealing-wax is alſo made after the ſame manner, by putting in fine *blue ſmalt* or *ultramarine.*

Purple ſealing-wax is ſo made, by putting in vermilion mixt with ivory-black, or lamp-black.

Black, hard, coarſe ſealing-wax, is made with ivory-black.

To make yellow ſealing-wax.

This is done as the reſt, with finely-ground *auripigmentum*, or yellow *maſticote.*

To make green ſoft wax.

Take bees-wax one pound, turpentine 3 ounces, oil-olive one ounce; mix and melt them, then add fine *verdegreaſe* one ounce; mix, and make the wax up, as the others.

To make yellow ſoft wax.

Take yellow bees-wax one pound, *turpentine* 3 ounces, oil-olive one ounce; mix and melt them, then add *gambooge* in fine powder 2 ounces, *auripigmentum* finely ground one ounce; mix, and make the wax as before.

To make perfum'd ſoft Wax.

This is done by mixing ten ounces of any of the former compoſitions, oil of *rhodium* a drachm, musk in powder a ſcruple, *civet* half a ſcruple, mixing them well.

After the ſame manner you may make ſoft Wax *of all colours*, having what ſcent you pleaſe, by mixing the perfume you would have either with the oil of olive before-hand, or elſe by working it into the compoſition of the *wax* after it is made.

To make golden or tranſparent Wax.

Take four ounces of *clarified roſin*, two ounces of *turpentine*, four ounces of *bees-wax*, and two ounces of *olive* oil; melt them well together, and ſcatter in the melting diſorder'd or ſhatter'd leaf-gold, and ſuffer it to mix or incorporate; then poliſh it over when made into ſticks, *&c.* and the gold will appear.

WEEPING [in *Drawing*,] is imitated in the following manner: a perſon weeping, has his eye-brows hanging down in the middle of the forehead; the eyes almoſt cloſed; very wet, and caſt down towards the cheeks; the noſtrils ſwell'd up, and all the muſcles and veins of the forehead apparent.

The mouth is half open, the corners hanging down, and making wrinkles in the cheeks; the under-lip appears turn'd down and pouting out; the whole face appears drawn together and wrinkled; the colour very red, eſpecially about the eye-brows, eyes, noſe, and cheeks.

WEST is repreſented [in *Painting*, &c.] by an old man in a ruſſet garment, with a red girdle, in which are *Gemini*, *Libra*, and *Aquarius*. He is muzzled; a ſtar on the crown of his head; his right arm extended towards the earth, with his little finger he ſhews the *weſt* part, where the *Sun* ſets; with his left he holds a bundle of poppies. The air duskiſh, and bats flying.

His garment denotes the *Sun's* ſetting and almoſt deprived of light; the ſtar *Heſperus*, over his head, as appearing in the *weſt* in the cloſe of the evening; the poppy, *ſleep*, being a ſoporiferous plant.

WHITE is one of the colours of natural bodies: but it is not ſo properly ſaid to be of any colour, as a compoſition of all colours.

It is demonſtrated by Sir *Iſaac Newton*, that thoſe bodies only appear *white*, which reflect all the kinds of colour'd rays alike.

Hevelius affirms it as a certain truth, that in the *northern* countries, animals, as *hares*, *foxes*, *bears*, &c. become *white* in the winter time, and in the ſummer reſume their natural colours.

Black bodies are found to take heat ſooner than *white* ones, by reaſon that *black* ones abſorb or imbibe rays of all kinds and colours, and *white* reflect all.

Thus *black* paper is ſooner put into a flame by a burning-glaſs than *white*; and *black* cloths hung up by the *dyers* dry ſooner than *white* ones.

WHITES *for painting in* MINIATURE.

The beſt *white* that is pretended to be ſold for painting in water colours, is *flake white*, which is better than *white lead* ground; and if it be pure, far exceeds it in beauty, becauſe *white lead* is apt to turn blackiſh, eſpecially if it be uſed in a hard water.

But ſome recommend a *white* made of *pearl* or the whiter parts of oiſter-ſhells, reduc'd into an impalpable powder ſo ſoft, as to feel like grounds of ſtarch or hair powder: this is by ſome call'd *pearl-white*; but it is difficult to be come by. This *white* will mix well with any colour.

But if you uſe *white lead*, firſt rectify it with *white-wine vinegar*, this will cauſe a fermentation, and the *white* will ſoon ſettle; then pour off the *vinegar*, and waſh it with common water. The method of waſhing it is thus:

Put the Powder into a glaſs of water, ſtir it about, and preſently pour off the water, while it is *white*, into ſome other clean glaſs or veſſel; let it ſettle, and then pour off the water from it, and it will be excellently fine.

When this *white* is ſettled, put to it as much gum-water as is neceſſary to bind it or give it a glaze.

It is obſervable, that *white lead* will turn black, if mix'd with water that comes from iron or clay; that is, in the ſpace of a month or two, you may perceive thoſe places where it lies thickeſt ting'd with *black*, and if it be mix'd with any other colour it will ſoon change or alter it.

Some recommend the powder of egg-ſhells of the brighteſt colour and well clean'd and waſh'd, as very good to be ground with gum water; or you may put about a twentieth part of clear white ſugar candied to grind with it in water; grind it as fine as poſſible, that is, to the ſtate of what is call'd an impalpable powder, and then uſe it.

Some ſay it is better, if ſome rectified ſpirits of wine be pour'd on it, which will clear it from any droſs that may be in it; this (as it is very probable) muſt be pour'd off, when the ſpirit of wine has done its work, and then the parts left behind, muſt be mix'd with gum-water again.

But it has been found by experience, that egg-ſhell powder is of very great ſervice as a *white* in water-colours, and that that it ſelf and the powder of oiſter-ſhells well rectified and mixed with the white of an egg well beaten, will make an extraordinary mixture in other colours, and will correct them from changing or altering their qualities.

But as for *white* for illuminating of prints, the clear *white* of the paper is proper to be left uncolour'd; and if it happens that the paper is apt to ſink, or to ſpread any water-colour that is laid upon it more than is neceſſary, then the way to correct it is as follows:

Fix the paper in ſuch a ſtation, as may only receive the colour you lay on to glaze, juſt as far as you deſign'd it; then take ſome ſtarch boil'd and prepar'd in water of a middle ſtrength, and with a large painting-bruſh ſtroke it over the back of the print; and after it has been well dry'd in the air or ſun, put the print in a book with a weight upon it, to take out the crumplings, which it may receive by wetting of it; and ſo will any print be render'd fit to receive water-colours, and prevented from running farther than we would have them.

There is a ſort of earth that comes from *China*, that is of a very ſoft nature, and very *white*; which does better in water-colours than any of the reſt; but it is very ſcarce.

Of making WHITE *colours.*

A fine WHITE *for water-colours.*

Diſſolve filings of fine ſilver, or leaf-ſilver, in *aqua-fortis* or ſpirit of nitre, then evaporate the *aqua-fortis* till it looks like cryſtals in the bottom of the glaſs: decant the other part of the *aqua-fortis*, and waſh the ſilver five or ſix times in common water, till it be freed from the *aqua-fortis*, which may be known by taſting it; then dry it for uſe. It muſt be uſed with gum-water, with a little water of ſugar-candy.

An incomparable fine WHITE LEAD.

Take choice *white lead*, grind it well upon a porphyry with vinegar, and it will turn blackiſh; then take a pot full of water, and waſh the *white lead* in it very well; let it ſettle, and pour off the water; grind it again with vinegar; repeat this once or twice, and you will have an excellent *white*, both for water-colours and painting in oil.

To make the WHITE *to be uſed with glove-leather ſize, for making a very fine poliſh'd gold.*

Having made the *ſize*, ſcrape ſome *crayon white* with a knife, or grind it upon a marble; melt and heat your *ſize* as hot as can be, then take it off the fire, and put in *white* enough to make it of the conſiſtence of pap, let it ſtand to infuſe for a quarter of an hour; then ſtir and mix it with a *hog's* hair-bruſh.

Add more *ſize* to this *white*, to make it thinner, for the firſt and ſecond goings over.

Let your firſt lay be dry before you go over it with a ſecond; and if it be wood you work upon, you ought to repeat it twelve times; but if it be paſte-board, ſix or ſeven will be ſufficient.

When this has been done, dip a ſoft bruſh in water, and ſtrain it between your fingers, and bruſh your work over with it, to cauſe it to lie more ſmooth and even. As ſoon as your bruſh is full of *white*, you muſt waſh it over again, and even change the water; when it is too *white*, you may uſe a wet cloth inſtead of a bruſh.

When the work is ſmooth and even, let it ſtand to dry; and when it is dry, rub it over with ſhave graſs, or a piece of new cloth, to make it the kinder.

To WHITEN *green or grey Flax.*

Firſt make a lye of good *aſhes* and unſlak'd *lime*, and ſteep the *flax* in it for twenty-four hours; and afterwards add ſome *ſal-armoniac* put into the middle of ſome unſlak'd *lime*, and a few warm *aſhes*; pour off the water, and make a ſharp lye, and boil the *flax* in this lye for an hour or two, and you will find it become very *white* and bright, and that the *ſal-armoniac* is fix'd.

When the *flax* has been ſteep'd in the lye, boil'd, and well dry'd, then it muſt be rinſed very well in running or river water, and blued and wrung out with the hands. *See* BLEACHING.

To diſcover WHITE *upon* BLACK *with an iron pencil.*

Having well cover'd your frame or other piece of work with a *white ground*, well varniſh'd, poliſh'd and ruſh'd; take lamp-black, and having ground it with yolk of egg, make trial of it apart, to ſee whether the black, when fixt, will burniſh very bright. You muſt ſize your black as much as it is neceſſary to make it ſtick.

Colour your frame, *&c.* with this *black*, lay it on well, dry it, and burniſh it with a tooth; then take an awl or bodkin of iron, ſharpened and flatted at the end like a chizel, of ſuch breadth you would have your fillet to be, and with a ruler and this iron thus ſharpen'd, draw fillets, ſcraping off the *black*, till you come to the *white*.

You may alſo, if you pleaſe, with a bodkin make Moresk works, which you may hatch into every leaf; as alſo other branch'd works, the imboſsment of which, you may make by ſcraping off the black with an iron bodkin, till you can ſee the *white*, ſtill keeping your iron-tool ſharp and ſmooth.

By this means your work will be of a fine *black*, well burniſh'd or poliſh'd like marble, in which you will have branch'd works that will ſeem like ivory inlaid in wood.

If your figures appear too much ſhadow'd, after you have drawn out all your work with a bodkin, take one or more irons like a folding-ſtick or rather blunter, as you ſhall ſee convenient; let it be well ſmooth'd and harden'd, and with it rub the figures as evenly as is poſſible, till no *black* appears any longer; but not ſuffering the iron to enter any farther than the ſuperficies of the *white*; that is, when the *black* ſhall be rubb'd off, and the figure ſhall appear very *white* and ſmooth; and afterwards with a tooth burniſh the *white* you have laid bare: and laſtly with a ſmall pencil, you ſhall draw the lines and hatch the ſhades, as if it were horn engraven or carv'd.

How to make upon an open WHITE GROUND *fillets and branch'd work.*

Firſt lay your frame or other work with boiling ſize, as is directed for laying upon *white* to gild with burniſh'd gold; and having ſiz'd it, take lamp-black well ground with water, then ſize it as the *white*, and go over your work with it five or ſix times, and afterwards ruſh it: then grind ſome of the ſame *white*, and grind it with as much yolk of egg as may make the *white* poliſh, and go over the work once or twice with this; and when it is dry, burniſh the *white* with a tooth, then with your iron draw upon the *white fillets*, *branch'd works* or *portraits*, according to your fancy, till the *black* appears.

The freezes of your frame will ſeem to be of ivory, and the *black* will ſeem to be engraved, or pieces of *ebony* inlaid in *Ivory*.

But to make it the better to reſemble ivory, you ſhould have by you a little piece of poliſh'd ivory, the better to repreſent its colour, which is not ſo white as chalk; but a little inclining to yellow, and this may be imitated by grinding with your chalk a little yellow *oker*, or a little pale *maſticote*, or the bones of ſheep's trotters burnt and ground to powder.

WHITENESS is the quality which denominates a body white. But Sir *Is. Newton* ſhews that *whiteneſs* conſiſts in a mixture of all the colours; and that the light of the ſun is *white*, becauſe conſiſting of rays of all colours

From the multitude of rings of colours which appear upon compreſſing two priſms, or object-glaſſes, or teleſcopes together, it is manifeſt, that theſe do ſo interfere and mingle with one another at laſt, as after 8 or 9 reflections, to dilute one another wholly, and conſtitute an even and uniform *whiteneſs*.

From whence, as well as from other experiments, it appears that *whiteneſs* is certainly a mixture of all colours; and that the light which conveys it to the eye, is a mixture of rays endued with all thoſe colours.

He alſo ſhews that *whiteneſs*, if it be moſt ſtrong and luminous, is to be reckoned of the firſt order of colours; but if leſs, as a mixture of the colours of ſeveral orders: of the former ſort, he reckons white metals; and of the latter, the *whiteneſs* of *froth*, *paper*, *linen*, and moſt other white ſubſtances.

And as the *white* of the firſt order, is the ſtrongeſt that can be made by plates of tranſparent ſubſtances, ſo it ought to be ſtronger in the denſer ſubſtances of metals, than in the rarer ones *air*, *water*, and *glaſs*.

Gold, or *copper*, mix'd either by fuſion or amalgamation, with a very little *mercury*, with *ſilver*, *tin*, or *regulus* of *antimony*, become *white*; which ſhews, both that the particles of white metals have much more ſurface, and therefore are ſmaller than thoſe of *gold* or *copper*; and alſo that they are ſo opake, as not to ſuffer the particles of *gold* or *copper* to ſhine through them.

And as he doubts not, but that the colours of *copper* and *gold* are of the ſecond and third order, therefore the particles of *white metals*, cannot be much bigger than is requiſite to make them reflect the white of the firſt order.

THE WILL is repreſented [*in Painting*, &c.] by a maid purblind, having wings on her back and feet; a gown of changeable taffata, and acting like one groping out her way in the dark.

Blind, becauſe ſeeing nothing herſelf, ſhe walks after ſenſe by groping. Her changeable robe, her wavering between hope and fear; the wings denote her reſtleſs condition, having found no reſt on earth, ſhe makes a generous effort towards heaven, by the wings on her feet.

SPIRIT *of* WINE.

It is of very great uſe in varniſhing; but if it be not properly prepar'd, it will ſpoil the varniſh; not being capable, for want of ſtrength, to diſſolve the gums, or make them ſpread; and ſo of conſequence, lie uneven upon the work.

To know when this ſpirit is ſufficiently rectified;

Put ſome of it into a ſpoon, and put a little gun-powder into it, and if it burns out, blows up the gun-powder, and leaves the ſpoon dry, then it is a good ſpirit; but if it fails of doing this, and leaves the ſpoon moiſt when the flame goes out, it is not fit for uſe.

WIRE, a piece of metal drawn thro' the hole of an iron, into a thread of a fineneſs anſwerable to the hole it paſſed through.

Wires are frequently drawn ſo fine, as to be wrought along with other threads of *ſilk*, *wool*, *flax*, &c.

The metals moſt commonly drawn into wire, are *gold*, *ſilver*, *copper* and *iron*.

Gold, and *ſilver-wire*, is made of cylindrical ingots of ſilver, cover'd over with a skin of gold, and thus drawn ſucceſſively through a vaſt number of holes, each ſmaller and ſmaller; till at laſt it is brought to a fineneſs, exceeding that of a hair.

That admirable *ductility* which makes one of the diſtinguiſhing characters of gold, is no where more conſpicuous, than in this gilt *wire*.

A cylinder of 48 ounces of *ſilver*, cover'd with a coat of *gold*, only weighing one ounce, as Dr. *Halley* informs us, is uſually drawn into a wire, two yards of which, weigh no more than one grain; whence, 98 yards of the *wire* weigh no more than 49 grains, and one ſingle grain of gold, covers the 98 yards; ſo that the ten thouſandth part of a grain, is above $\frac{1}{3}$ of an inch long.

He alſo computing the thickneſs of the skin of gold, found it to be $\frac{1}{114500}$ part of an inch. Yet ſo perfectly does it cover the ſilver, that even a microſcope does not diſcover any appearance of the ſilver underneath.

M *Rohault* likewiſe obſerves, that a like cylinder of *ſilver*, covered with *gold* 2 feet 8 inches long, and 2 inches 9 lines in circumference, is drawn into a *wire*, 307200 long, *i. e.* into 115200 times its former length.

Mr. *Boyle* relates, that 8 grains of *gold* covering a cylinder of *ſilver*, is commonly drawn into a wire 13000 feet long.

Silver wire is the ſame with gold wire, except that the latter is gilt, or covered with gold, and the other is not.

There are alſo counterfeit *gold* and *ſilver-wires*; the firſt made of a cylinder of copper, ſilvered over, and then covered with gold; and the ſecond of a like cylinder of copper, ſilvered over, and drawn through the iron, after the ſame manner as gold and ſilver-wire.

Braſs-wire is drawn after the ſame manner as the former. Of this there are divers ſizes, ſuited to the different kinds of works. The fineſt is uſed for the ſtrings of muſical-inſtruments, as ſpinnets, harpſicords, manichords, *&c.*

The pin-makers likewiſe uſe vaſt quantities of wire, to make their pins of.

Iron-wire is drawn of various ſizes, from half an inch, to one tenth of an inch diameter.

The firſt *iron* that runs from the ſtone when melting, being the ſofteſt and tougheſt, is preſerved to make wire of.

WISDOM is repreſented [in *Painting*,] cloth'd in a blue mantle, ſeeded with ſtars.

HUMANE WISDOM is repreſented [in *Painting*] by a youth with four hands, and four ears, a quiver by his ſide, a recorder in his right hand, and a lyre in the other; ſacred to *Apollo*.

The hands denote uſe and practice, neceſſary to get wiſdom, beſides contemplation; the ears, that to hear others is requiſite; the flute and quiver, that one ſhould not be too much taken with encomiums of one's ſelf, nor unprovided in caſe of offence.

WILLIAM WISSING was a face-painter, bred up under *Dodaens*, a hiſtory-painter at the *Hague*; upon his coming over to *England*, he worked ſome time for Sir *Peter Lely*, whoſe manner he ſucceſsfully imitated, and after whoſe death, he became famous He painted king *Charles* II. and his queen, king *James* II. and his queen, the prince and princeſs of *Denmark*, and was ſent over to *Holland* by the late king *James*, to draw the prince and princeſs of *Orange*; all which he performed with applauſe. What recommended him to the eſteem of king *Charles*, was his picture of the duke of *Monmouth*, whom he drew ſeveral times, and in ſeveral poſtures; he drew alſo moſt of the court, and was competitor with Sir *Godfrey Kneller*, who was at that time upon his riſe. In drawing his portraits, eſpecially thoſe of the fair ſex, he always took the beautiful likeneſs; and when any lady came to ſit to him, whoſe complexion was any ways pale, he would commonly take her by the hand and dance her about the room till ſhe became warmer, by which means he heightened her natural beauty, and made her fit to be repreſented by his hand. He died much lamented, at the age of 31, at the late earl of ***Exeter***'s (***Burleigh-houſe*** in ***Northamptonſhire***) and lies buried in ***Stamford*** church, where that noble peer erected a monument for him, with a ***Latin*** inſcription.

WIT is repreſented [in *Painting*,] in a diſcoloured mantle.

DYING *of* WOOD, *Horns and Bones.*

To dye elder, box, mulberry-tree, pear-tree, of the colour of EBONY.

Let the wood lie in ſteep in *alum*-water for 3 or 4 days, then boil it in common oil, with a little *Roman vitriol* and ſulphur.

Where take notice, that the longer you boil the wood, the blacker it will be; but if it be boil'd too long, it will make it brittle.

To do this according to Glauber.

Diſtil in *aqua-fortis*, *ſalt-petre* and *vitriol*, and with this beſmear the wood, as often as you ſee accaſion.

To dye WOOD RED.

Firſt boil it in *alum-water*, and afterwards put it into a tincture of *Brazile*-water for a fortnight or 3 weeks, or into a tincture of *Brazile* and *milk*.

To dye WOOD BLUE.

Firſt boil it in *alum*-water, and then put it into a diſſolution of *indigo* and urine.

To dye WOOD GREEN.

Put as much filings of copper into *aqua-fortis* as it will diſſolve; then put in the wood, *&c.* and let it lie all night, and it will tinge it of a fair green.

To inlay WOOD *with figures.*

To do this with mother-of-pearl, break the ſhells, and cut them according to the forms of the figures you deſign; and after you have cut the wood with gouges, put them in.

Thus you may imitate all ſorts of fruits; for you will find ſome *green*, ſome *yellow*, ſome *blue*, ſome *purple*: ſo that if you would imitate a black grape, the leaf of a tree, or other fruit, you have a ſuitable colour.

Make a ſmall hole through every piece, pinning it with a ſmall piece of ſilver wire, to make it ſtick faſt; then take *linſeed*-oil and *orcanet*; rub it well, and wipe off the oil clean; when it is dry, varniſh it with the drying varniſh.

Alſo (not oiling it) you may make very fine compartiment-work, in fine threads that will look like ſilver; thus make a ſet of ſmall gouges of all ſorts, very ſharp; and with theſe, cut your deſign.

Then melt *tin*, adding to it the ſame quantity of *quickſilver*; ſtir it with a ſtick; being cold, put it in the palm of your hand; if it be too ſoft, add a little more *tin*; grind this compoſition with water upon a marble; put the compoſition into a ſhell, and with it, fill up the engravings and cuttings which you have made with your gouges; then let your work ſtand 2 or 3 hours to dry; and then poliſh it with your hand, and it will look like ſilver.

By adding more *quickſilver*, you may make a thinner compoſition, which you may rub into the indentures you have cut, till it be as bright as ſilver; or inſtead of *tin*, you may mix leaf-ſilver with the *quickſilver*, which will add to the beauty of the work.

This is commonly practiſed upon black and coloured wood, poliſhing them with a tooth.

If you would have the compoſition more beautiful, grind *tin-glaſs* and waſh it till it leaves the water clear; then mix it in a ſhell with ſome gum, and fil up the engravings with it, with a pencil; then let it lie for 3 or 4 hours to dry, and quicken it with the compoſition of *mercury* and *leaf-ſilver*.

To make WOOD *of divers Colours.*

For a red.

Take half a pound of *Fernambouc*, or what other you think fit, rain-water, a handful of *quick-lime*, and two handfuls of aſhes; let them ſteep for half an hour in the water, and ſettle to the bottom; then take a new earthen pot, and put in the *Fernambouc*, with the lye made of lime and aſhes; and having ſteep'd half an hour, boil it. Then let it cool a little, and pour it into another new pot, adding to it half an ounce of *gum-Arabick*; then put ſome rain-water and a piece of *alum* into another pot or pan; boil it, ſoak the wood in this alumed water, then take it out and dry it; then warm your red colour, and with a bruſh, rub it as long as you think neceſſary; then dry it and poliſh it with a dog's tooth, and it will be of a ſhining ſcarlet colour.

Another excellent red.

Boil *Brazile* in rain-water till it be high coloured, then ſtrain it through a cloth; but you muſt be ſure, not to uſe any thing of iron about it, as ladle, *&c.* Then give your wood one laying or waſhing of ſaffron, ſteep'd in water, which will render it of a pale yellow; when it is dry, give it ſeveral waſhings of the *Brazile*-water, till the colour is to your mind; let it dry and burniſh it with a tooth, and varniſh it with drying varniſh, with the palm of your hand, and it will be of a beautiful *red* inclining to *orange*. If you put a ſpoonful of lee amongſt the *Brazile*, it will make the red deeper; or if you boil it with a little *alum*: but the yellowing it, improves the colour; and by how much the wood is whiter, by ſo much the more beautiful will the colour be.

Another red for WOOD.

Reduce orchanet to fine powder, and mix it with oil of nuts, make it luke-warm, and rub the wood.

Another.

Temper *Brazile* in *oil of tartar*, with which, rub over the wood, and it will become of an excellent *red*.

To ſtain WOOD *of a yellow colour.*

This may be done either with French-*berries* and *alum*, or with *turmerick* or *ſaffron*, or *Merita*-earth.

A poliſh'd black for WOOD.

Cover the wood with lamp-black, ground with gum-water, with a pencil; and when it is dry, poliſh it with a tooth, and it will look very well.

Another black dye for WOOD.

Put little pieces of very ruſty iron into good black ink, and let it ſtand for ſome days; afterwards rub the wood with it, and it will penetrate it, then poliſh it with a tooth, and it will look very beautiful.

To counterfeit ebony wood.

The moſt ſolid wood, and freeſt from veins, is beſt; ſuch as pear-tree, apple-tree, and ſervice-tree; take any of theſe woods, and black it well, and when it is dry, rub it with a cloth; then having made a little bruſh with ruſhes, tied near the ends, melt ſome wax in a pot, mixing ſome lamp-black with it; then with the bruſh, throw on ſome of the wax, bruſhing it till it ſhine like *ebony*; then rub it with a cloth, and ſome of the wax.

The wood ſhould be well poliſh'd and ruſh'd, before it is black'd.

Holley is the beſt of woods for counterfeiting of *ebony*. This is to be put into a hat-maker's copper, where he dyes his hats; and when it has been ting'd to the thickneſs of a ſix-pence (which you may know by cutting it) take it out and dry it in the ſhade, that it may the better imbibe the dye-water; then poliſh it with an iron, to take off the foulneſs of the dye; and afterwards, with ruſh, powder of charcoal, and ſallet-oil; as is done to *ebony*.

The wood of *Tunis* poliſhes eaſily; it alſo burniſhes well with a tooth, and is better to cut than *ebony*, which is very brittle.

An excellent blue colour for WOOD.

Boil a quarter of a pound of turnſole for an hour, in 3 pints of lime-water, and colour the wood with it.

A violet colour for WOOD.

Temper *Dutch turnſole* with water, and ſtrain it through a cloth; before it is uſed on your work, try it on a piece of white wood, to ſee if it be not too deep. When you have laid on the colour, put ſome of the ſame colour to a quantity of water, to render it very thin, and waſh the wood with this, till it become bright; then dry it, burniſh, and varniſh it; and if the wood be white before, it will then be of an excellent blue.

Another Violet.

Boil 4 ounces of *Brazile* and 8 ounces of *logwood* together, in 2 quarts of water, with an ounce of common *alum*; and in theſe, boil the wood.

A purple colour for WOOD.

Steep turnſole as is directed for the *violet-colour*, and add to it, the tincture of *Brazile* boil'd in lime-water, and it will be an excellent purple: this ought to be varniſhed, both to beautify, and to preſerve it.

A way of ſtaining, or marbling WOOD.

Grind white-lead and chalk together on a marble; put it into a pot, and temper it again with the yolk of an egg, beaten with water; then lay on this white with a large pencil; let it dry, and go over it again with the ſame; let it dry again, and then take a point made of a ſtag's horn; draw off the white, where and in what form you will; then ſprinkle the lime mix'd with urine. The violet wood which dyers uſe, will become black as ebony; by ſprinkling it with lime and urine, plum-tree and cherry-tree, turn of a deep red; the pear-tree and ſervice-tree, turn reddiſh; walnut-tree grows black, by mingling ſome galls in powder, with lime and urine.

A pencil made of mutton-ſuet, rubb'd where you would draw with yolks of eggs, will do the ſame thing.

It will be excellent upon black cherry-tree, plum-tree, or any wood of a dark colour.

To make WOOD *of a ſilver colour.*

Reduce *tin-glaſs* in a mortar, to fine powder; add to it water, and grind it to the fineneſs of paint; put it into an earthen pan, and waſh it two or three times till it is very clean; and then mix clear glue with it, and having firſt warmed the wood, lay the mixture on it with a bruſh; let it dry, and poliſh it with a tooth.

To make WOOD *of the colour of gold, ſilver, copper or braſs.*

Pound rock-cryſtal very fine in a mortar, then grind it on a marble with clean water; then put it into an earthen veſſel with a little glue, warm it and lay it on your work, as above; rub it with gold, ſilver or copper, and it will be of the ſame colour you rub it with, then poliſh it.

To lay on pencil-gold or ſilver on WOOD.

Temper the gold or ſilver with weak gum-tragacanth water, very clear; lay it on the lights of your work, with a pencil, without touching the ſhadows, which are to be done with *indigo*, ground with a weak gum-*Arabick* water; then varniſh it with the drying varniſh.

The drying Varniſh is made as follows.

Mix ſpike-oil with gum-ſandarach; if it be too thick, add ſome oil: in making it, let it not have a greater heat than may be endured by the hands; black wood, or wood dyed black, is the moſt proper for gilding.

For ſilver upon WOOD.

Firſt lay the wood over with parchment-glue, and when it is dry, figure it as you think fit; ſhadow and finiſh with water in which tallow has been boiled, heighten with ſilver, (as in that of gold) and then varniſh it.

To colour WOOD *after the manner of marble.*

For a table, *&c.* firſt lay 7 or 8 layers of white, as tho' it were to be gilded with burniſh'd gold; then having ready ground black, not over-much ſiz'd, add thereto a little yolk of egg, and a little dry ſaffron; lay it on, let it dry, and then burniſh it exactly.

By this means you may counterfeit to the life, all ſorts of marble, having a little experience in colours; and make alſo all ſorts of works; as fretted work, flat work, ovals, *&c.*

Let there be in the colours, a little yolk of egg and ſaffron; that is, in ſuch as can bear it, colouring the marble with divers colours; the colours muſt be laid on clear, like threads. You may alſo on ſuch a ground before directed, pour out a ſhell of one colour in one place, then turning it ſhelving on one ſide, cauſe the colours to run, which will make veins; and then take another ſhell, full of another colour, and do the like; ſo continuing with all your colours.

Or elſe with a groſs bruſh, lay all your colours very clear, near one another.

After the colours are dry, you may make uſe of the pencil to repair the defects; then burniſh your work, which will not be ſubject to duſt or ſpoiling.

To colour a frame with fine ſpeckled red.

Grind vermilion with water, then ſize it, and grind it with a drop or two of yolk of egg.

With this colour, ſpeckle the wood of the frame with a pencil, and when it is dry, take lake ground with water, and a little ſize, two drops of yolk of egg, and with the end of the bruſh, ſpot it, letting remain as much white as you lay on red; then burniſh it with a tooth, and gild the mouldings with burniſh'd gold.

An exquiſite way of enriching and beautifying WOODEN WORKS.

Firſt cover your wooden work with hot glue, then with the mixture of glue, and whiting upon this, lay the ſize for burniſh'd gold, and lay on the gold and ſilver and burniſh it; then having ground right *indigo* with yolk of an egg, and that being very thin and clear, lay it on the ſilver, ſo as that the ſilver may appear through it. When it is dry, pounce your paper pattern, being whitened with chalk; then with the ſame *indigo*, draw over the pounced ſtrokes of your figure as neatly as you can, as if you were to draw a figure with a pen, upon paper; then with the ſame *indigo* made thinner, ſhadow it, and afterwards with *umber*; then heighten with a wooden point, by hatching the lights, then varniſh the work, and it will ſeem to be enamelled.

Another way, but more glorious.

Inſtead of *indigo*, ſteep *Dutch turnſole* for a day or two in water, then ſtrain it through a cloth from the dregs; grind and mix this water with the yolk of an egg, lay this on your ſilver, then with turnſole ground with *turnſole*-water, draw with a pencil what lines or figures you think fit, which you may ſhadow and hatch in the proper places, which heighten in diſcovering the ſilver, as before directed; then varniſh the work.

To make the ground of a purple colour.

Boil *Brazile* in lime-water, and mix with *turnſole*-water. This will not laſt ſo well as that done with *indigo*, becauſe the *turnſole* in time, is apt to turn red, and will ſtain the ſilver; therefore before you varniſh, lay upon it the white of an egg beaten into glair, which will render it much more durable, and admirably beautiful.

To inrich carv'd WORK, *or any ſort of* WOODEN *work.*

The wooden work, whether picture-frames, or other things, cover with burniſhed ſilver (as taught under the article *gilding*, &c.) and having made ſome *vellum*-glue, or parchment-glue, boil'd to a thick jelly, ſtrain it through a cloth; let it ſtand to ſettle, and then ſtrain it again; then with this glue, give one laying upon your work with a ſoft bruſh: if that be not enough, give a ſecond; and then varniſh it. But before you varniſh, if you have a mind ſo to do, you may paint flowers, fruits, leaves, or birds, in water-colours, and in their proper colours; and varniſh them, having firſt laid them over with glue.

Note, you may mix with your glue, either milk, or ſoap of *Alicant*.

How to embelliſh a frame with green leaves.

Take indigo, a little orpiment ground with water, inclining towards a greeniſh brown, mixing with about half a pint of your colour, the quantity of a muſcle-ſhell of the yolk of eggs, and as much ſize as is requiſite to make it.

Having firſt laid on your white in the ſame manner, as if you were to gild it with burniſh'd gold; then paint the freezes of your frame with this brown colour, leaving your mouldings untouch'd, which you are before to gild with burniſh'd gold.

Having thus prepar'd your work, you muſt either by pouncing, or other ways, draw what figures you pleaſe; then with *indigo* alone, ground with water, a little ſize, and a drop of the yolk of an egg, draw your figures or leaves, and ſhadow them; and in ſhadowing, ſweeten, heightening them with green, *viz.* you muſt take *orpiment*, well ground with the *greeniſh-brown*, wherewith you laid the firſt layer upon your frame; then heighten it with *orpiment* alone, ground with water and ſize, and a little drop of the yolk of an egg among your colours, becauſe it would dry in burniſhing; for the yolk of egg ſerves only to make it burniſh the eaſier.

But if you would paint your leaves in oil, you muſt burniſh the firſt layer of *greeniſh-brown*, and then paint your leaves with drying oil, boil'd with litharge of gold; and inſtead of *orpiment*, you may, if you pleaſe, work with *maſticote*.

To repreſent the whole WORLD *in a glaſs.*

Take of the fineſt *ſal-nitre*, what quantity you pleaſe, half that quantity of *tin*; mix them well together, and calcine them hermetically: then put them into a retort, to which adjoin a glaſs receiver with leaves of gold put into the bottom thereof; lute them well together, put fire to the retort 'till vapours ariſe, which will cleave to the gold: augment the fire 'till no more fumes aſcend; then take away the receiver, cloſe it hermetically, and make a lamp fire under it, and you will ſee repreſented in it, the ſun, moon, ſtars, fountains, trees, herbs, plants, flowers, fruits, and indeed all things after a very wonderful manner. *Tho' this may ſeem ſtrange, yet our author affirms it for a truth.*

FRANCIS WOUTERS was born at *Lyere* in the year 1614, and was brought up in the ſchool of *Rubens*; he was a good painter of figures in ſmall, chiefly naked, as alſo of landskips; his merits promoted him to be principal painter to the emperor *Ferdinand* II. and afterwards coming into *England* with that emperor's ambaſſadors, he was upon the death of that prince made gentleman of the bed-chamber, and chief painter to king *Charles* II. then prince of *Wales.* He lived a conſiderable time in *London* in great eſteem, and at length retir'd to *Antwerp*, and there died.

To WRITE *with Gold and Silver.*

Grind *gum-armoniac* with a little juice of *garlick*, and put to it a few drops of weak water of *gum-Arabic*, and ſo make it to the thickneſs of an ink, that you may conveniently write with it; then let it dry a little, but not too much, leſt it ſhould not take the leaf-gold or ſilver; nor too little, leſt it drown them. Then lay the leaf-gold or ſilver upon a gilding cuſhion; take it up with a piece of cotton, on which you have breath'd, and cover with it the part you intended, preſſing it down hard; and where the gum-water is, it will take. Then bruſh off with a bit of other cotton, what it has not taken; and when it is thoroughly dry, burniſh it with a piece of poliſh'd ivory, and it will appear very bright.

Another way. Take ſhell-gold, which is made of the rugged edges or cuttings of leaf-gold; and when you are going to uſe it, put in a little fair water, and temper it up with a clean pencil, and lay it on either with pen or pencil, in what form you pleaſe, either by way of writing or gilding, and let it be thoroughly dry; rub it over with a dog's, calf's, or horſe's fore-tooth, and it will be very ſhining and luſtrous.

Secret Writing. Put powder of *alum* into water, and what you write the letters will not appear; but put the paper into water, and then you may read it, or juice of ſpurge will do.

To Write *letters that cannot be diſcovered.*

Take a ſheet of white paper, double in the middle of it, then cut holes through both the half-ſheets, cut the holes like the panes of a glaſs window, or any other faſhion you pleaſe; then with a pin prick two little holes at each end, and cut your paper in two halves, and give one half to your friend, to whom you deſign to write, and keep the other half your ſelf.

When you write, lay your cut paper on half a ſheet of writing paper, and ſtick two pins through the two holes, that it ſtir not, then write your mind to your friend thro' theſe holes; then take off the paper with the holes, and write any thing, what you pleaſe, to fill up the vacancy. And when your friend receives the letter, let him lay his cut paper on it, putting the pins into the holes, and then what you wrote not to the purpoſe is covered, and he diſcovers your mind.

Another way. Write the letter with common ink on one ſide, then turn the paper, and write on the other ſide with milk what you would have ſecret, (with a clean pen) and let it dry, then when it is to be read, let the written ſide be held next the fire, and the milky letters will appear bluiſh on the other ſide, and may be perfectly read.

An exquiſite method of inviſible Writing.

The firſt Ink. Take a pennyworth of *litharge of gold* or *ſil-*

ver unprepared, pound it in a mortar, then infuſe it in a vial half full of ſtrong vinegar, ſhake them well together, and let them ſtand to ſettle, and being clear, write upon your paper with a new pen, and it will not appear at all.

The ſecond Ink. Burn cork 'till it has done ſmoking, extinguiſh it in *aqua-vitæ*, or ſpirit of wine, dry it, and mix it with water, and a little *gum-Arabick*, to the conſiſtence of thin paſte; when you would write with it, make it thinner with common water, and write upon what is written with the forementioned ink.

The third Ink. Take *yellow orpiment* and *quick-lime*, of each an ounce, pound them in a mortar, and put them in four ounces of common water, and ſtir them well; this water will take away the ſecond ink, and make what was written with the firſt appear.

Writing *not to be read but in water.*

Write with the juice of *ſpurge* or *alum*-water, dry it, and it will not be legible without wetting.

To make black Writing *vaniſh, and appear again.*

Diſſolve burnt *tartar* in common water, and filtrate it; ſtrike it over the writing, and it will diſappear.

To make the Writing *appear again.*

Diſſolve an ounce of white *vitriol* in a pint of water, filtrate it, ſtrike the paper over with it, and the writing will preſently appear as before.

To write *with Ink, which will vaniſh in five days.*

Infuſe an ounce of *ſal-armoniac* four or five days in ſtrong water: make of it ink with a piece of *touchſtone* beaten fine, and what you write with it will be gone in five days.

To write *with an Ink that ſhall vaniſh in twenty-four hours.*

Boil galls in ſtrong water, put to it ſome *vitriol*, a little *ſal-armoniac*, and a little *gum-Arabick*, and it is done.

THOMAS VAN WYKE, commonly call'd the old, was father of *John van Wyke*, and a famous painter, born at *Haerlem*, he painted landskips, eſpecially havens and ſea-ports, ſhipping and ſmall figures; but his particular excellency lay in repreſenting chymiſts in their laboratories, and things of the like nature. He followed the manner of *Peter de Laer*. He left *England* after he had lived a conſiderable time abroad, and died here about fifty years ago.

Y.

YELLOW is a bright colour, reflecting the moſt light of any after white.

There are divers *yellow* ſubſtances that become white upon wetting, and drying them again ſeveral times at the ſun; as wax, linen cloth, *&c.*

The ſame bodies, if they be already white, and continue a long time in the air, without being wetted, turn *yellow*.

Paper and ivory, apply'd near the fire, become ſucceſſively *yellow*, *red*, and *black*. Silk when turn'd *yellow* is whitened with the fumes of ſulphur.

Yellow in *Dying* is one of the five ſimple and mother colours. For the fineſt *yellows* they firſt boil the cloth or ſtuff in *alum* and *pot-aſhes*, and give the colour with *goud*.

Likewiſe *turmeric* gives a good *yellow*, tho' not the beſt. There is alſo an *Indian* wood that gives a *yellow* colour, bordering on gold. There is another ſort of *yellow* made of ſavoury, but this is inferior to them all.

With *yellow*, red of *madder*, and that of goat's-hair prepar'd with *madder*, are made the gold *yellow*; *Aurora*, thought-colour, *Macarate*, *Iſabella*, *chamoiſe* colour, which are all caſts or ſhades of *yellow*.

Painters or *Enamellers* make their *yellow* of *maſticote*, which is *ceruſs* raiſed by the fire, or with *oker*.

Limners and *colourers* make it with *ſaffron*, *French* berries, *orcanette*, &c.

YELLOWS. There are ſome objects, which have the appearance of gold, ſhining through the colours of green, red, or blue; ſuch as ſome ſort of flies and beetles, and the *Cantharides*.

This golden tranſparency is very well imitated by laying on the drawing ſome leaf-gold on the ſhaded part, a little giving in to the light ſide of the print.

The way of laying on the leaf-gold, is to waſh the part, where the gold is to be, with ſtrong gum-water, and when it is grown ſomething dryiſh, to lay on the gold as ſmooth and even as poſſible, preſſing it down cloſe with cotton. But in doing this, care muſt be taken, that in laying on the gum-water, you do not exceed the limits you would have the gold appear to ſhine.

In this caſe the gold is to ſhine only through the tranſparent colour, which is to be laid upon it.

You muſt obſerve this, that the leaf-gold will not regularly receive water-colours, and for that reaſon it muſt be ſtroak'd over with a little thin liquor of ox-gall in a painting-bruſh of camel's hair, and then it will receive any colour that we have a mind to paint upon it, and will hold it.

So you may have golden reds, golden greens, and golden blues, golden yellows, golden purples, and what you pleaſe.

The *greens* may be firſt the *verdigreaſe* green, or the ſap-green; the *reds* may be *lake* or *carmine*; the *purples*, *lake* and fine *indigo*, or *carmine* and *indigo*; and for the blues, *indigo* on the dark ſide, and on the light ſide a little ſtroke of *ultramarine* blue, juſt to ſhine into the light, and it will have an admirable effect.

N. B. There is to be found upon *roſe-trees* in *June* and *July*, a kind of beetle of a golden green colour, which will ſerve for a direction in this kind of painting.

But if gold itſelf be us'd, it will be beſt to poliſh it, which you may do after the following manner:

There are to be ſeen in many manuſcripts fine golden letters, which riſe above the ſurface of the *vellum* or paper, the compoſition that raiſes them above the paper, is ſaid to be made of *vermilion* and the white of an egg, whisk'd or beaten up to that conſiſtence, as is call'd an oil, work'd together like a kind of paſte, and with a ſtamp fix'd to the vellum or paper, with *gum Arabick*; on this figure of a letter waſh ſome ſtrong gum-water with a camel's hair pencil, taking care that the gum does not reach more than the out-lines; then lay on the leaf-gold cloſe with ſome cotton, and as ſoon as it is dry, rub it with ſome dry cotton, and then poliſh it with a dog's tooth; this will make it appear, as if it was really caſt in gold.

There is beſides this another way of working in *gold*, and that is perform'd by ſhell-gold; but then it muſt be pure gold, and not that which is brought from *Germany*, which will turn green in a few day's time.

Before you uſe this gold, cover the ſhady parts with *vermilion*; and after your gold has been well rectified with ſpirits of wine, lay it on with gum-water, which will readily mix with it, and when it is dry, poliſh it with a dog's tooth.

In laying on the gold it may be beſt to leave the lights vacant of it, and ſo it will make a much brighter appearance than if the object was covered all over.

But if one was to cover by accident the whole piece with gold, there is no better way to ſet it off, than by tracing over the ſhady parts with gall-ſtone; or, which is much preferable, the yellow, the compoſition of which you will find below, made of *French* berries, I mean that which is the deepeſt in colour; a little *minium* brightens it very much. How the *minium* is to be rectified you may ſee among the REDS, and poliſh the gold before you uſe the *minium* on it.

After gold I ſhall treat of YELLOWS, as they fall gradually in their courſe of ſtrength.

The firſt YELLOW is a kind of *ſtraw-colour*, and is made of flower of brimſtone, which of it ſelf is fine enough to mix with gum-water.

A common way of illuminating prints, is by giving the tincture of *gamboge* for a yellow, and this may be of two or three ſorts, either fainter or ſtronger; the laſt to be a ſhade to the firſt, and the laſt to be ſhaded with the preparation of *French*-berries.

The great Mr. *Boyle*, in ſome papers he left behind him, ſays; that if the roots of *barberries* are cut, and put into a lixivium made ſtrong with water and pearl-aſhes, there will be a fine yellow colour produc'd from it; which having been try'd, ſucceeds very well.

He likewiſe propoſes another way for making a tranſparent yellow, which is, by waſhing the root of *mulberry*-tree very clean from the earth, in common water, and boiling it in a ſtrong lixivium of pearl-aſhes and water; and it will afford a yellowiſh juice, from which may be extracted a tincture, much deeper than the former.

Yellow oker will make another good pale *yellow*; but it is a colour, rather of too much body for illuminating of prints; but yet being well ground with gum-water, it is of uſe after it has been well waſh'd.

The plant *celandine* will afford another good *yellow*, by infuſing it in water, and preſſing it gently, and then boiling the liquor with a little alum; this *yellow* will incline a little to green.

But a *yellow*, which ſome prefer to the reſt, and may be us'd in ſeveral capacities of lights, is one made of *French* berries, prepar'd as follows:

Boil two ounces of *French* berries in a quart of *lixivium* made of pearl-aſhes and water, 'till the liquor will give a fine tinge of *yellow* to a bit of paper dipp'd into it, then pour it off from the berries, let the liquor cool, and then put it into a bottle for uſe.

Then again put a pint of the ſame *lixivium* to the berries, and boil them 'till the liquor is as deep-coloured as gall-ſtone; and this will be fit for the ſhade of any ſort of *yellows* you can uſe.

This may be boil'd 'till it produces a brown colour; and will, with a little ox-gall, ſerve to ſhade any leaf-gold, that has been laid on paper, and is much preferable to gall-ſtone in imitating any gold colour. It anſwers well upon a tincture of *gambooge*, or any of the former *yellows*.

Next to this may be reckon'd the tincture of ſaffron, in common water only, which affords a bright reddiſh *yellow*, ſuch as one would have (to cover the ſhadowed parts of a print) for an orange-colour; and when ſaffron is infus'd in rectified ſpirits of wine, there is nothing higher; but then, except the colour be loaded with *gum Arabick*, it will fly.

As for a deep *yellow* with a body, *Dutch* pink comes the neareſt of any to the before-mention'd ſtrong *yellow* made of *French* berries in point of colour; and of a lighter *yellow* is the *Engliſh* pink, which is ſtill made of *French* berries, and in a body likewiſe

Alſo a good *yellow* colour, for illuminating of prints, may be extracted from the *French roots* of *ginger*, and it makes a fine green with tranſparent *verdigreaſe*.

N. B. The *Engliſh* and *Dutch yellow pinks* are made with *French* berries ground to a fine powder, and boiled.

Yellow *Silk Dyes, and firſt Bloſſom*-Yellow.

Dye it after the ſame manner as gold colour, then heighten it with orange-dying ſuds, after which rinſe and dry it.

To dye Silk yellow.

Procure a clean kettle, put in a ſufficient quantity of water, and for every pound of ſilk put in two pound of *yellow* wood, and ſix ounces of galls; let the *yellow* wood boil an hour before you put in the galls, and afterwards boil them together for half an hour, and then put in the ſilk, having firſt alumed and rinſed it, ſtirring the dye; then wring it out of the kettle with a little pot-aſhes; and after it has been wrung out, put it into the dye again, and leave it there to ſoak for a whole night, and in the morning, rinſe, beat, and dry it.

To dye Stuffs a brimſtone Yellow.

Boil the ſtuff in three pound of *alum*, one pound of *tartar*, and three ounces of *ſalt* for an hour; throw away the water, then make a liquor of *yellow-brown*, laying it in the ſame order as ſtraw in brew-houſes; then add *lye-aſhes*, and draw the ſtuff through the dye three or four times very quick; to do which dexterouſly, it will require the aſſiſtance of three or four men.

Another. Let the ſtuffs be alumed as uſual for half an hour, and then for every pound of ware take half a pound of *yellow* dye-weed, and a handful of wood-aſhes; boil them a quarter of an hour, then throw the rinſed ware into the liquor, work it about, 'till you perceive it to be well dyed, then cool it and rinſe it out.

Of dying Yellows *and Orange-Tawney.*

1. *To dye a* Yellow *colour.*

Take water a ſufficient quantity, *alum* one pound, enter your yarn cloth, *&c.* boil two hours, and take it out, and waſh it clean. Take freſh fair water a ſufficient quantity, *fuſtick* two pounds, let it boil, and enter your cloth, boil an hour, and take it out; this will dye twenty pounds weight.

2. *To dye an Orange-Tawney.*

Let your wool, yarn, flannel, ſtuff, or cloth, *&c.* be firſt dyed into a red colour; and then being red, let it be dyed into a yellow colour.

3. *Another way to dye an Orange-Tawney.*

Take ſtale wheat-bran liquor a ſufficient quantity, *alum* three pound, enter twenty yards of broad cloth, handle and boil three hours; take it out, cool and waſh it well. Take fair water, and good linge, or hedder, which grows in moraſſes, moors, or ſwamps,

wamps, boil it a good while, and take forth the hedder, and cool with a little *yellow*; take it up and air it. Take freſh bran-liquor a ſufficient quantity, *madder* two pounds, enter your cloth, and boil it with a quick fire, then take it out, cool it, and waſh it well. Obſerve you may make it a good *yellow* with *fuſtick*, and then afterwards perfect it with *madder*.

4. *To make another* Yellow *colour*.

Take *buckthorn* berries gathered about the beginning of *Auguſt*, bruiſe them, and add a little *alum* in fine powder, mix and keep all in a braſs veſſel.

5. *Another good* Yellow.

Make a ſtrong tincture of *ſaffron* in white-wine vinegar, and add thereto a ſufficient quantity of *alum* in powder.

6. *To make another excellent* Yellow *dye*.

Take pure clear wheat-bran liquor thirty quarts, *alum* three pounds, enter your ſtuff or cloth, boil for two hours; after which take wold, weld, or dyer's weed two pounds, and boil it 'till you ſee the colour good.

7. *Another good* Yellow *dye or colour*.

Take running water and malt-wort, of each a like quantity; in which diſſolve a ſufficient quantity of *alum* by boiling: into this liquor put whatſoever you would have dyed *yellow*, and let it boil a good while, then take it out, and put it into a ſtrong decoction of wold, weld, or dyer's weed, made with chalk-water, and laying weight upon it, let it boil one hour or two.

8. *To dye an Orange-Tawney colour*.

Make a weak *lixivium* of pot-aſhes, or buck-aſhes, as women waſh their clothes withal, put into it wood-ſoot a ſufficient quantity, and black cork; boil a while, then put in the matter you would dye (being firſt dyed *yellow*) and let it boil a little, caſting in while it boils a handful of bay-ſalt.

9. *To dye Barley-Straw, &c. of a* Yellow.

Take a *lixivium* of pot-aſhes, a ſufficient quantity of yellow bark, of the *barberry*-tree a pound, make a decoction, and in this boil your ſtraw.

10. *To dye a* Yellow *colour*.

Take *alum*-water a ſufficient quantity, inner bark of a plumb-tree one pound, or as much *ſumach*; make a decoction, and boil what you think fit in it, and it will be of a fair *yellow*.

11. *To make a* Yellow.

Take *orpiment* a ſufficient quantity, grind it with water, then put it in little parcels upon paper to dry, and then you may uſe it as a pigment.

12. *To make an Orange colour*.

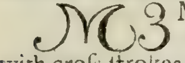
Take *vermilion*, grind it with a little *ſaffron*, and then mix it with a little *red-lead*.

To dye Thread Yellow.

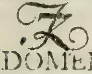
Boil eight pound of *broom*, one pound of *Spaniſh yellow*, one pound of crab-tree rind, and one pound of corn marigold in a kettle, with three quarts of ſharp lye, and work the thread in the liquor three times ſucceſſively, not ſuffering it to dry between whiles, and it will be of a beautiful and laſting colour.

Z.

Z. A. ſtands for *Zazingeri*, or M. Z. for *Martin Zinkius.*



MATTHEW ZAGEL engrav'd ſeveral ornaments and groteſque pieces *per lo traverſo*, or with croſs ſtrokes; he liv'd in the year 1500, and us'd this mark.



THEODORE ZAGHEL, his mark in a woman with her back towards you.

DOMENICO ZAMPIERI, *call'd* DOMINICHINO, ſcholar of *Denis Calvert* and the *Carraches*, born in 1581, liv'd at *Bologna*, *Rome*, *Naples*, excell'd in hiſtory, died in the year 1641, aged 66 years.

ZAFFER; this is call'd in *Latin Zaffera*, which *Merret* tells us comes from *Germany*; it is taken by ſome for a preparation of an earth for tinging glaſs *blue*; others take it for a ſtone, and he himſelf for a ſecret, aſſerting that there are but few authors, who have made any mention of it, and no one that has told us what it is.

I ſhall here give you the ſentiments of ſome authors, who ſpeak of it, when the reader will ſee what authors are determined about it.

Cardan in his fifth book *de ſubtilitate* calls it a ſtone, his words are theſe; "there is another ſtone which colours glaſs blue, "ſome call it *zaffer*."

Julius Scaliger, who has compoſed a treatiſe of glaſs, does not at all reprehend *Cardan* for calling it a ſtone. *Cæſalpinus* after *Cardan*, l. 2. c. 55. reckons it alſo amongſt ſtones, thus he ſpeaks of it: "there is another ſtone colouring glaſs blue, and if you add "too much, it makes it black, they call it *zaffer*; it inclines from "an aſh to a purple colour: it is heavy and brittle, and melts not "of itſelf, but with glaſs runs like water."

Ferant. Imperatus, l. 28. c. 8. ſays, that this ſtone is very like the load-ſtone and *mangan*eſe; but the learned *Agricola* without doubt knew it not, for he makes no mention of it.

Anſelmus Boetius of *Boot*, phyſician to the emperor *Rodolphus* II. who has given us a large hiſtory of all ſorts of ſtones and jewels, has allotted no place to *zaffer* amongſt thoſe he mentions, altho' it be brought from *Germany*, according to the ſentiment of *Merret*, who ſays *zaffer* is a compound, aſſerting it is neither earth nor ſtone, not mixing at all with water, nor breaking, as is eaſy to remark, by ſqueezing it between the fingers.

That certainly, if it were either of theſe two, it would have been diſcovered by the diligence of thoſe that have treated of it, being of ſo great uſe to thoſe who make glaſs, which makes that author ſay, that *zaffer* is a ſecret, whereof the compoſition was found out by a *German*; that if he might give his conjecture of it, he ſhould think it made of copper and ſand, and ſome proportion of *lapis calaminaris*; that the blue colour it gives, ſeems to be owing to the braſs, as that of *manganeſe* to iron. That only minerals can tinge glaſs, and that no materials can be found for that purpoſe, except metalline ones.

Wherefore he concludes, that the matter which compoſes *zaffer*, can only be either copper or braſs.

The method of preparing Zaffer *for tinging Glaſs.*

The only preparation of *zaffer*, according to *Merret*, is to grind it into a very ſmall powder, and ſearce it through a fine ſieve.

But *Neri* gives us one, which makes the glaſs much finer, which is this:

Take *zaffer*, in the biggeſt pieces you can get, put it into earthen pans, and let it ſtand one day in the furnace, then put it into an iron ladle to be heated red-hot in the furnace; take it thence, and ſprinkle it with ſtrong vinegar; being cool'd, grind it fine on a marble-ſtone, after which waſh it with warm water in earthen pans, letting the *zaffer* ſettle to the bottom, and decanting off the water gently: this will ſeparate the foulneſs and impurity from the *zaffer*, which will remain at the bottom pure and clean; which muſt be dry'd and ground again, and then kept in veſſels cloſe ſtopp'd for uſe.

This will tinge glaſs much better than the firſt.

Pomet, in his general hiſtory of drugs, makes mention of a mineral brought from *Surat* in the *Eaſt-Indies*, of a bluiſh colour, or like a partridge's eye, which he calls *zafer*, *ſafre*, or *ſapher*, to which he aſcribes the ſame virtue of tinging glaſs blue.

ZEPHYRUS, the weſt wind, is repreſented [in *Painting*, &c.] by a youth with a merry countenance, holding in one hand a ſwan with wings diſplay'd, as tho' about to ſing, on his head a garland of all ſorts of flowers.

It is call'd Zephyrus *of ζωὴν φέρων,* i. e. *bringing life, becauſe it cheriſheth and quickneth.*

ZINK is a kind of mineral or ſemi-metal, which ſome confound with *biſmuth*, and others with *ſpelter*.

Zink is a kind of mineral lead, very hard, white and brilliant, and which tho' not ductile enough to denominate it a metal, yet will ſtretch a little under the hammer.

It is found plentifully in the mines of *Goſſelaer* in *Saxony*; that which is commonly ſold, is in large thick ſquare cakes, which would make one ſuſpect it were melted, when taken out of the mine, and caſt in moulds of that form.

Zink is us'd in purging and purifying tin, much after the ſame manner, as lead is in purifying *gold*, *ſilver*, and *copper*.

Founders uſe it with *turmerick* to tinge *copper*, to which it gives a fine gold-colour.

Mr. *Homberg* conjectures, with a great deal of probability, that *zink* is no other than a natural mixture of two real metals, *viz.* tin and iron.

FRANCIS VAN-ZOON was an eminent *Dutch* painter of fruits, flowers, and plants; he was bred up at *Antwerp* under his father old *Van-Zoon* a painter in the ſame way. He married a niece of Serjeant *Streater*'s, ſhe brought him into the buſineſs of ſeveral perſons of quality, which firſt occaſioned his being known. He painted looſe and free, yet kept cloſe to nature, and all his pictures ſeem drawn by the life. He began ſome large pieces, wherein he propos'd to draw all the phyſical plants in the apothecaries garden at *Chelſea*; but that work proving tedious, he deſiſted from it, having greater encouragement other ways. He died here in *London* about thirty years ago, and lies buried in *St. James's*.

ZOUST, *or* SOEST, was an eminent *Dutch* face-painter, who came into *England* about the year 1680, and found here encouragement ſuitable to his merit. The portraits he drew after men are admirable, having in them a juſt and bold draught, and good colouring; but he did not always execute with a due regard to grace, eſpecially in women's faces, which is an habit can only be acquired by drawing after the moſt perfect beauties.

Mr. *Zouſt* painted ſeveral perſons of very great quality; his colouring was very warm, and he was a great imitator of nature, but for the moſt part unfortunate in his choice. He died in *London* about ſixty years ago.

FEDERICO ZUCCHERO born in 1543, ſcholar to his brother *Taddeo Zucchero*, liv'd in *Rome*, *France*, *Spain*, *England*, excell'd in hiſtory, portraits, ſculpture, and architecture, died in the year 1609, aged *66* years.

TADDE ZUCCHERO, born in the year 1529, ſcholar to his father *Octaviano Gio. Petro Calabro*, and ſtudied *Rafaelle*, liv'd at *Rome*, *Tivoli*, *Florence*, *Caprarolo*, *Venice*, excell'd in hiſtory, died in the year 1566, aged 37 years.

ARTI-

ARTICLES added by way of SUPPLEMENT.

To make BRONZE, *or powder of the colour of gold.*

TAKE of *gum-elemi* 12 drams, melt it; of crude *mercury*, one ounce, *ſal-armoniac*, two ounces; put all into a glaſs-vial, with bole and whites of eggs: melt all, and when melted, add orpiment at diſcretion, with ſome filings of braſs; being well mingled together, lay it with a pencil on that which you would *bronze.*

How to BRONZE.

Having whited and made your figure ſmooth, grind cryſtal and touchſtone with water, temper it with glue, and lay it on your work; inſtead of burniſhing, rub the metal of which colour you would have, well, and it will be finiſhed.

To bronze with copper.

Take pin-duſt, grind it well, and waſh it till the water be quite clear, mix it with glue, as you do *tin-glaſs*; lay it on the white ground with a pencil, and burniſh; the ſame may be done with *antimony.*

To make an egg move about.

You muſt firſt empty it through a little hole made in it, then put ever ſo little vitriol into it, ſtop it up preſently, and you will ſee the effect.

The ſame may be done by putting a leech into it, having ſome water ſpilt in ſome part of the room.

To make a MAN's FACE *appear hideous.*

Take common ſalt, and fine chalk in powder, with which, powder very well ſome hemp or flax, dipping them in good *aqua vitæ*, then ſet them on fire, firſt putting out all other lights, and you will ſee wonderful things.

A FIRE *that will burn under* WATER.

Take three ounces of *powder*, *ſalt-petre* one ounce, *ſulphur* three ounces, pound, ſift, and mix them together; fill your moulds, fire them and throw them into water.

How to hold FIRE *in one's hand without burning.*

Put ſome vitriol into ſtrong vinegar, with an equal quantity of juice of *plantain*, and anoint your hands.

To touch FIRE *without being burnt.*

Take the juice of *marſh-mallows*, ſeeds of *pſillium* in powder, mix all together with the whites of eggs, and juice of radiſhes;

anoint your hands, and let them dry, then anoint them again, and you may touch fire without danger. To make it burn, there muſt be powder of *brimſtone*.

Indian-RED, or *Perſian-earth*, is what we improperly call *Engliſh-red*; this is a very dear drug, eſpecially ſuch as is in little pieces, moderately hard and of a high colour, uſed by ſhoe-makers, who ſteep it in the white of an egg, to colour ſhoe-heels with.

An inviſible INK. *The firſt.*

Take a penny-worth of litharge of gold or ſilver, unprepar'd; beat it, then infuſe it in a vial, half full of ſtrong vinegar, ſhake them well together, and ſet it by to ſettle; and when it is clear, write upon paper with a new pen, and it will not appear at all.

The ſecond *ink*. Burn cork till it has done ſmoaking, quench it in *aqua-vitæ*, or ſpirit of wine, and dry it, and mix it with water and a little *gum-Arabick*, to the conſiſtence of thin paſte; when you would write with it, make it thinner than common water, and write upon what is written with the before mentioned ink.

The third *ink*. Take yellow *orpiment* and quick-lime, of each an ounce; beat them and put them into four ounces of common water, and this water will take away the ſecond ink, and make what was written with the firſt, appear.

To mould off NAKED *perſons with plaiſter, in what form you pleaſe.*

If the perſon whom you chuſe to take a mould from, be hairy on the thighs or breaſt, ſhave off the hair; but let that under the arm-holes, be well greas'd with hog's greaſe, or cut it: let not the body of the perſon be conſtrain'd to any unnatural poſture; and greaſe him well over.

Having plac'd him in the midſt of a table or large board, laid on the ground and greas'd, then make a counter-mould of brick or clay round him, which you muſt plaiſter on the inſide, ſo that it be about three fingers breadth from the figure.

If the legs are a little open, put a little clay before you make the counter-mould, or a thin board greas'd, between the legs, ſo that it neither touch them nor the thighs; then take other little pieces of thin board, in form of a knife, or thin wedge, ſharp on one ſide, but thicker than the other; greaſe them, then view the place where you intend the mould ſhall ſeparate, be it in two, three, or four pieces; ſtick theſe pieces of board upon the clay, on the inſide the counter-mould, the ſharp edge to the ſide of the perſon that is to be moulded; but if you place theſe boards from the ſoles of the feet to the calf of the leg, gartering-place, knees, or higher; do it according as the leg, thigh, or other part of the body is ſituated, more or leſs inward or outward. The figure being caſt, and theſe pieces taken away, you have the place where to open the mould.

Having raiſed the counter-mould as high as the ſhoulders, make a little trough, about 2 or 3 feet long, which muſt reſt on the top of your mould, one end joining to the neck of your figure, at the other end place a wooden tunnel, as big as a large pail; then take 6 or 7 large ſtaves, or ribs of a large cask or barrel, bind them faſt about with a cord, for fear it ſhould burſt; then take plaiſter well burnt, and throw it into a large tub of water, or into ſeveral large braſs pails or kettles, with which (being neither too thick nor too thin) fill your counter-mould through the tunnel, that it may run down the trough; pour it in with all the expedition poſſible, for which you muſt have ſeveral hands to aſſiſt you. After it has been fill'd, the plaiſter will be ſet in a little time; which being done, pull down the counter-mould: then with a large knife, or ſuch like inſtrument, dreſs the outſide of the mould, while the plaiſter continues eaſy to be cut; then take out the thin pieces of wood, and have other pieces of about a foot and half long, more or leſs, in form of a wedge, and ſharp as a knife, about a finger in thickneſs on the back, and about half a foot broad; place theſe in the clefts made by the ſmall boards, and open the mould, which ſhould be done in as few pieces as can be.

Thus will you have an upright figure in two pieces, except the arms.

But in figures lying all along, the mould muſt be in more pieces; but if the figure hath one, or both arms extended, draw a circle like a bracelet with red ink, round about the arm or arms, about half a foot from the ſhoulder, which mark being imprinted in the mould, the figure taken off will alſo have the ſame, which will eaſily direct where to cut it, and fit the length of the arm, to the body of the figure.

If you deſire a copy of the figure, dreſs the mould, tie the pieces ſtrongly together, and caſt plaiſter into it.

But if you would caſt a figure of bronze, or braſs, ſeparate the mould where you put the ſmall pieces of wood; or elſe with an iron wire, ſaw the mould as near the hollow as poſſibly you can, ſo that putting a bigger wedge into the cleft, you may open your mould. Being divided ſo as that you may caſt your wax figure, make thick pieces of earth, dry it, greaſe it, and make a kernel, or inward mould: put in the iron points or broches to ſupport it; take out the thickneſs of earth, pour in the wax, then melt it out, and bake the mould

In like manner you may take off all ſorts of figures and poſtures according to the life; be ſure to caſt all your plaiſter at the ſame inſtant; for many and ſlow runnings make faulty moulds: Alſo the perſon being up to the neck in plaiſter, the coldneſs of the water will ſo oppreſs his ſtomach, that he will be apt to ſhrink, or lift up his ſhoulders, and ſo deform the mould.

But to prevent this, let the water be made luke-warm. If you mix a third of fine brick with the plaiſter, and ſome plume alum, you may caſt braſs in it, only making a thickneſs of earth to make the kernel; but before you bake it, give a laying or two of ſal-armoniack water in all the hollow places of the mould, tying it with ſtrong wire, or iron hoops, and putting in the broches.

Thus you may caſt very fine figures either of *lead* or *tin*. The chief thing is to find out well-ſhap'd perſons, and hard labourers, who have always their muſcles more ſtrong and better ſhap'd than ſuch as live a more ſoft and eaſy life, who often have their bodies formed by their cloths; nor thoſe whoſe toes grow over one another; the perſon muſt be ſet right, that the poſture may not ſeem awkard, eſpecially in upright figures.

How to mould the Face without much trouble to a perſon.

Take a little bruſh or pencil, lay ſome warm paſte upon the hairs of the eye-brows, the forehead, all along the roots of the hair and upon the beard; lay the perſon on his back, and with a napkin rolled up, compaſs the face about to hinder the plaiſter from falling into the neck, or upon the hair.

The plaiſter being well tempered, neither too thick nor too thin, and that the buſineſs may be done the ſooner, let there be two to lay on the plaiſter with their hands, beginning at the forehead, and ſo all along the face, except at the noſtrils, which muſt not be ſtopped; but your mould muſt be charged with as much thickneſs as it will bear, not ſtopping the noſe. If the plaiſter be good, it will ſet preſently, then take it gently off, and you have the mould of the face to the life.

To caſt hands to the life.

Place the hands in what poſture you think fit, greaſe them, and proceed as before; putting little boards greas'd, to divide the ſeveral pieces; after the ſame manner may feet and legs, in all poſtures, be done.

You ſhould always put a cloth under the mould when you open it, that if any ſmall pieces happen to break off, they may be gathered and joined with ſtrong glue.

To mould off the FACE *of a perſon in* Wax.

Take a pound of new *wax*, a third of *colophony*, melt them at a ſlow fire, let them cool ſo long as that you may endure ſome of it on your hand without burning it; then having oil'd the face all over with ſallad-oil, cover the hair of the eye-lids and eye-brows eye-brows with paſte, as alſo the beard; then with a bruſh nimbly cover the face, about the thickneſs of half a crown, being careful not to ſtop the noſtrils, and that the perſon ſqueeze not his eyes together, becauſe that will render the face deformed.

Thus having the face of wax, take it gently off; then ſtrengthen it with clay on the back ſide, that in pouring in the plaiſter, it may not give way.

After this manner you may caſt all ſorts of faces; laughing, weeping, grimaces, or wry-faces; alſo hands, feet, fruit, fiſh, or any thing elſe, dividing the mould into two pieces with a warm knife; then join them, and fortify them with potters earth.

There is no way of caſting, neater than this: the eyes being open'd afterwards with a ſmall gouge, and theſe may be coloured to the life, and is a way of caſting very fit for painters, carvers, and engravers to caſt patterns.

Colours for METALS, *and precious ſtones.*

For *Iron*, uſe *lamp-black* and *white-lead*, and if you would repreſent it as ruſty, mix ſea-coal black with a little white.

2. For *ſilver* uſe *charcoal-black* and *white-lead*; and where you would have it darkeſt, put in more *charcoal*; work the *ſilver* ſomewhat ruſtyiſh, and give it a ſudden gloſs with *white-lead* only.

3. For *gold* uſe *lake*, *umber*, *red-lead*, *maſticote*; lay the ground with *red-lead*, and a little dry *pink*, and where you would have it darkeſt, ſhadow it moſt with *umber*, and where lighteſt, with *maſticote*.

Take notice that in grinding red-lead *for* gold-ſize, *put in a little* verdigreaſe *to make it dry the ſooner.*

4. *For pearls*, mix charcoal-black with white-lead, till it be a perfect ruſſet; then make the *pearl* with it, and give it a ſpeck of white-lead only, to make it ſhine.

Where take notice, that ceruſe *temper'd with oil of* white poppies, *is excellent for heightening up* pearls.

5. *For precious ſtones:* For *rubies*, &c. lay their counterfeit grounds with tranſparent colours; and *lake*, *verdigreſe*, and *verditer*, will give them a ſhining colour.

A waggiſh way to make PEAS *jump out of the pot.*

Put a ſprig or two of the herb clary into a pot, in which peas are boiling, ſo that the water be not very low, nor the pot too cloſe covered, and it will ſucceed according to your deſire.

To hinder a POT, *and meat from boiling.*

Put nettle-ſeeds into it, and no fire will make it boil.

To make boiled meat BLEED.

Dry and powder the blood of an hare, and ſtrew it upon boil'd meat, and it will ſeem as if it bled.

To make a PERPETUAL MOTION.

Caſt ſome very ſmall filings of iron into *aqua-fortis*, and leave them there till the water has taken the quantity of *iron* that is requiſite, which will be in about 6 or 7 hours; then take off the water and put it in a vial an inch wide, with a large mouth, and put in a ſtone of *lapis calaminaris*; ſtop the bottle well, and keep it very cloſe.

To diſcover gold under a black colour, with an ivory Point, a great ſecret and very beautiful.

Having firſt laid your gold on your work, and burniſh'd it well, grind *lamp-black* with *linſeed-oil*, or *nut-oil*, adding to it as much *umber*, and black to make it dry, and then as much *oil* of *ſpike*, as *linſeed-oil*

Lay the *black* upon the gold, very ſmooth and even, and let it ſtand to dry about a day, more or leſs, according to the time; it is dry enough when it will not ſtick to your fingers. Then take a point of ivory or ſtag's-horn well ſharpened, rub it upon a piece of glaſs to take off the roughneſs, that it may not ſcratch the gold or the white; then draw what you pleaſe with the point, diſcovering the gold.

If it appear bright and ſhining, and the black be not uneven and ſlovenly about the edges of the ſtrokes you have made, then is your black in good temper; but if in diſcovering the gold, it ſeem tarniſh'd, the *black* is not dry enough, therefore let it ſtand to be a little drier.

If the *black* be troubleſome to get off, and cannot be eaſily done with an unſlit pen, then mix ſpike oil, till it come to work eaſily, clean and bright; and then you may eaſily draw the fineſt hair-ſtrokes.

The *black* being thus ordered, cover the burniſhed gold all over, with a ſoft pencil; and then with the feather of a turky-cock's tail, paſs'd over the *black* as even and ſmooth as you can, free from all manner of duſt or filth; being dry and having made your draught or figure as large as the work, follow the track of the lines with the point, and diſcover and lay open the gold.

If you would have the figures of birds, or little beaſts, or any thing elſe, find out the ſtrong lights of them, diſcover them by hatching with a pen or the point of a pen, if not too ſharp; but if by the ſtrokes approaching too near one another, you ſhould happen to make a fault, you may mend it by laying on a little black, letting it dry.

If the way of making great lights be not ſo eaſy, or ſhadows are more eaſy and pleaſing to you, you may diſcover the gold with a point of ſoft wood, that it may not ſcratch the gold, which you muſt diſcover or lay open to the bigneſs of your whole figure, ſhadowing the proper places, as the noſe, eyes, hair, *&c.* leaving it to dry; then hatch it with a point according to the judgment of him who draws it.

That you may know when 'tis dry enough to hatch, always at the ſame time you cover your work, cover alſo a little waſte piece for trials, to prevent the ſpoiling your work.

Your work being finiſhed, let it ſtand three or four days to dry, and varniſh it with drying varniſh twice, if you find there is occaſion.

When you lay on the black, do but one piece at a time, becauſe otherwiſe, ſome of it being too dry, it will be difficult to diſcover the gold.

You muſt alſo be very curious in the firſt laying on the varniſh, to ſpread it gently for fear of defacing the work.

To do the ſame after a more eaſy manner.

Having cover'd your work with burniſh'd gold or ſilver,(which you pleaſe) mix and grind lamp-black and umber together very well with water, taking care not to put ſo much *umber* as to ſpoil the black; then add ſome of the yolk of an egg, grinding it with it, and lay it on your work with a ſoft pencil or bruſh very ſmooth, and when it is dry (if you ſee occaſion) give it a ſecond laying of the ſame black, and with an ivory point very ſmooth, diſcover your work. If the black does not come eaſily off, there was too little of the yolk; if the ſtrokes be too broad and ragged, then there was too much yolk of egg.

This way of diſcovering the gold, is more ſhining than the other; but be ſure to be careful in varniſhing you do not pull off the black, nor cauſe it to ſully; and to that end, be ſure to work with a ſoft pencil, and ſmooth ſtroke.

You need not much fear, in laying on the varniſh the ſecond time, provided it be not too thick, and it be oil of *ſpike* varniſh.

To do the ſame another way.

Having laid the black on the burniſh'd gold, as before directed, mix equal parts of linſeed-oil and oil of ſpike, which lay lightly on with a large pencil; let the work ſtand to dry for 4 or 5 days. more or leſs, according as you find the gold more or leſs eaſy to appear bright and ſhining.

By this way you may allow almoſt what time you will, always remembring to make a tryal, before you go to work.

For *blue* take *azure*; for *red*, fine *lake*; for *green*, *verdegreaſe*; and ſo in all other colours, being mixt and ground with the yolk of an egg, as before directed.

Addenda to PICTURES. There are three ſeveral ſorts of knowledge relating to *pictures.*

The *firſt* conſiſts in diſcovering what is *good*, and what is *bad*, in the ſame picture

The *ſecond* has reſpect to the *name* of the author.

The *third*, to know whether it be an *original* or a *copy.*

The firſt of theſe is certainly the moſt difficult to be acquired; it ſuppoſing a *penetration* and *fineneſs* of *wit*, with a good *acquaintance* with the principles of painting; and on the meaſure of theſe things, the knowledge of the art depends.

Penetration and *fineneſs of wit*, are neceſſary in making a judgment of the *invention*; of the *expreſſion* of the *ſubject* in general, of the *paſſions* of the ſoul in particular; of *allegories*, and what depends on the *cuſtom* or *manners*, and poeſy.

The knowledge of principles aſſiſts a perſon in finding out *times* and *places*, the cauſes of the effects which we admire; whether they proceed from the correctneſs or elegance of the deſign, or whether the objects appear advantageouſly diſpos'd, or the colouring, lights and ſhadows, be happily managed.

Thoſe whoſe minds have not been cultivated by the knowledge of principles, or at leaſt have ſome ſpeculation of them, may indeed be ſenſible of the effects of a *fine picture*; but can never be able to give a reaſon for the judgment they make.

To know the author of a PICTURE.

The knowledge of the names of authors, muſt be acquired by long practice, and the ſight of a great many *pictures* of all the ſchools, and of the principal maſters that compoſe them.

Of theſe ſchools there may be reckoned five, *viz.* the *Grecian*, *Roman*, the *Venetian*, the *Lombard*, the *German*, and the *French.*

After a perſon has by much application acquired a diſtinct idea of each of theſe ſchools, if he would diſcover to which of them a picture belongs, he muſt compare it with that, to which he thinks it bears the neareſt affinity; and having found out the ſchool, he muſt apply the picture to that painter, whoſe *manner* agrees moſt with that work; but perhaps it is the greateſt part of the difficulty to attain a knowledge of this particular manner.

There are ſome curious perſons, who form an idea of a maſter, by a ſight of three or four of his pictures, and who after this think they have ſufficient authority to determine as to his manner, without conſidering what care the painter took about them, and what age he was of, when he drew them.

We are not to judge of the merit of a painter, from ſome particular pictures of his, but from his works in general; for there is no painter but what has made ſome *bad*, as well as ſome *good*, according to his care, or the motion of his genius.

Nor is there any painter who has not had three manners, *viz.* his beginning, his progreſs, and his end.

The *firſt* he took from his *maſter*; the *ſecond* he formed by his *goût*, in which are to be found his capacity and genius; and the third commonly degenerates into what is called *manner*: for a painter who has a long time ſtudied after nature, is willing without any more trouble, to make uſe only of the experience he has acquired.

When a curious perſon has well conſidered the different pictures of a maſter, and has form'd a perfect idea of his ſtyle, he may then make a judgment who is the maſter of a picture, without incurring the cenſure of raſhneſs; tho' a critick who has a talent, and has ſtudied and practiſed the art, may ſometimes be deceived in the name of an author, yet he will at leaſt never be deceived in the juſtneſs and ſolidity of his ſentiments.

There are pictures which have been made by ſcholars, who have copied their maſters very exactly, in their judgment and their manner.

Some painters have followed the *goût* of another country, and not their own; and ſome again have left one manner for another, and who have by this means made ſome pictures, which will puzzle the beſt judges to gueſs the name of their author.

But nevertheleſs, this inconvenience is not left without a remedy; for ſuch as do not ſatisfy themſelves in knowing a maſter's hand, have penetration enough to diſcover the character of his mind.

A skilful man may eaſily communicate the manner, in which he executes his deſign; but not the delicacy of his thoughts.

It is not ſufficient to know the motion of the pencil of a picture, in order to find out the author, if he cannot penetrate into that of his mind too; and tho' it is a very great attainment to have a juſt idea of a painter's *goût* in his deſign, yet it is neceſſary alſo to enter into the character of his genius too, and the turn which he is capable of giving his conceptions.

To know whether a PICTURE *be an original or a copy.*

It is here ſuppoſed that a copy is made by a good maſter, which deſerves a ſerious reflection, and will make a perſon doubt, at leaſt for ſome time, whether it is an original or a copy.

There are of ſuch copies three ſorts.

The *firſt* done faithfully, but ſervilely.

The *ſecond* done lightly, eaſily, but not faithfully.

The *third* is done both faithfully and eaſily.

The firſt, which is faithfully but ſervilely done, includes the *deſign*, the colouring, and the touches of the original; but the fear of paſſing beyond the bounds of this exactneſs, and of erring againſt faithfulneſs, has render'd the hand of the copyer ſtiff, and if it be never ſo little examin'd, ſhews it to be what it is.

The *ſecond*, which is done lightly and eaſily, but not faithfully, is more likely to impoſe upon the ſpectator, becauſe of the lightneſs and eaſineſs of the pencil; but the unfaithfulneſs of the contours or out-lines, will undeceive good judges.

As to the *third*, which are both faithful and eaſily perform'd by an artful and light hand, and above all, in the time of the original, will puzzle the greateſt criticks, and often hazard their pronouncing againſt truth, tho it may be agreeable to veriſimility:

As there are ſome things that favour the opinion of the piece's being an original; ſo again there are others that ſeem to deſtroy it; as *firſt*, the *repetition* of the ſame picture; *ſecondly*, its having been forgotten a long time; *thirdly*, the cheapneſs of it.

But tho' theſe conſiderations may have weight, yet they are ſometimes very trivial, for want of a thorough examination.

That a picture is forgot, proceeds often from the hands into which it falls, the place where it is put, the perſons which ſee it, or the little value that the owner has for painting.

The cheapneſs of it often proceeds from the neceſſity or ignorance of the ſeller.

The repetition of a picture, which is a more ſpecious cauſe, is not always a ſubſtantial reaſon.

There is ſcarce a painter but has repeated ſome one of his works, either becauſe he was pleaſed with it, or becauſe he was deſired to draw another like it; and ſometimes the greateſt artiſts have been deceived.

There are beſides, a ſort of pictures which are neither originals nor copies, which the *Italians* call *paſtici* from *paſte*; becauſe as the ſeveral things that ſeaſon a *paſty* are reduced to one taſte, ſo counterfeits that compoſe a *paſtici*, tend only to effect one truth.

A painter that would deceive in this way, ought to have in his mind the manner and principles of the maſter, of whom he would give an idea, whether he takes any part of a picture which that maſter has made, and puts it in his own work, or whether the invention is his own, and he imitates lightly, not only his touches, but even his *goût* of deſign and colouring.

It often happens that theſe painters, who intend to counterfeit the *manner* of another, aiming to imitate ſuch as are more skilful than themſelves, they make better pictures of this kind than if they were to do ſomething of their own.

Among thoſe who took delight in counterfeiting the *manner* of other painters, we may mention one *David Teniers*, who has deceived and ever will deceive the curious, who are not before acquainted with his dexterity in counterfeiting *Baſſano* and *Paolo Veroneſe*. There are ſome of his *paſtici* perform'd with ſo much cunning, that they have ſurpriz'd the eyes of the moſt judicious; but after they have examin'd them the nearer, they have ſoon diſtinguiſh'd the one's colouring and the other's pencil.

Teniers had a particular talent in imitating *Baſſano*; but the light and eaſy pencil which he us'd in this artifice, is the very proof of his deceit: for his pencil, tho' eaſy and light, is not ſo lively nor ſo proper to characterize Objects, as that of *Baſſano*, eſpecially as to animals.

Teniers indeed underſtood the union of colours, but there was a certain grey predominant in his, and his colouring had not the vigour and ſweetneſs of *Giacomo Baſſano*. It is the ſame with all *Paſtici*; and if we would not be deceiv'd by them, we muſt examine their *goût* of deſign, their colouring, and the character of their pencils, with the originals from whence they were taken.

PRINTS are of great uſe for *drawing*, *painting*, &c. they are one of the happieſt productions of latter ages.

And they are in our age arriv'd to ſo high a degree of perfection, and good gravers have furniſhed us with ſo many on all ſorts of ſubjects, that it may truly be ſaid, they are the depontaries of all that is fine and curious in the world.

The origin of *prints* was in the year 1460, and aroſe from one *Maſò Finiguerra*, a goldſmith of *Florence*, who having grav'd a plate, and caſting ſome of it in melted ſulphur, he perceived what came out of the mould was mark'd with the ſame *prints* as his plate, by the *black* which the ſulphur had taken from his graving: he try'd to do as much on ſilver plates with wet paper, by rolling it ſmoothly with a roller, which alſo ſucceeded.

This novelty tempted *Baccio Baldini*, a goldſmith of the ſame city, to try whether he could do the ſame; and his ſucceſs encourag'd him to engrave ſeveral plates of the invention and deſign of *Sandro Boticello*; and upon this *Andrea Mantegna*, who was at that time at *Rome*, ſet about engraving ſome of his own pieces.

The knowledge of this invention getting into *Flanders*, *Martin* of *Antwerp*, then a famous painter, engrav'd abundance of plates of his own invention, and ſent ſeveral prints into *Italy*, which were mark'd thus, M. C.

After *Martin* of *Antwerp*, *Albert Durer* began to appear, and gave the world an infinite number of fine *prints*, both in copper and wood, all which he ſent to *Venice* to be ſold.

Marco Antonio, who happen'd at that time to be there, was ſo charm'd with the beauty of theſe *prints*, that he copied thirty-ſix of them, which repreſented our Saviour's paſſion; and theſe copies were receiv'd at *Rome* with ſo much the more admiration, by how much the more they were finer than the originals.

At the ſame time *Ugo da Carpi*, an *Italian* painter of a mean capacity, but of a wit apt for invention, found out by means of ſeveral plates of wood, the way how to make *prints* reſemble deſigns in *claro obſcuro*; and ſome years after the invention of *etching* was diſcovered, which *Parmeggiano* ſoon made uſe of.

Theſe firſt *prints* drew the admiration of all that ſaw them for their novelty; and the skilful painters, who wrought for glory, were willing to uſe them, to ſpread their works all over the world.

Raphael, among others, employ'd the famous *Marco Antonio* to engrave ſeveral of his *pictures* and *deſigns*; and thoſe admirable *prints* were ſo renown'd, that they carried the name of *Raphael* through all the countries of *Europe*.

A vaſt number of gravers have ſince *Marco Antonio* made themſelves famous, in *Germany*, *Italy*, *France*, and the Low-Countries, and have publiſh'd, as well by graving as etching, an infinite number of *prints* on all ſorts of ſubjects, as well hiſtories, fables, emblems, devices, medals, animals, landskips, flowers, fruits, as in general all the viſible productions of art and nature.

From theſe, painters may draw every thing that may aſſiſt them in the ſeveral parts of their art; as the *antique* pieces, and thoſe of *Raphael* and *Caracci*, for the good *goût*, *correctneſs of deſign*, the *dignity* of *manner*, for the choice of the *airs* of the head, the *paſſions* of the mind, and the *attitudes*.

Thoſe of *Correggio* for *grace* and *delicacy* of *expreſſion*.

Thoſe of *Titian*, *Baſſano*, and the *Lombards*, for the character of *truth*, for the ſimple expreſſions of nature, and above all for the *goût* of *landskips*.

Thoſe of *Reubens* for the grandeur and magnificence of his invention, and the artifice of *claro obſcuro*.

In ſhort thoſe, tho' they may be defective in ſome particular part of them, may yet have ſomething in them ſingular and extraordinary; for the painters may draw a conſiderable advantage from all the different manners of thoſe that have gone before them.

For *ſculptures*, *ſtatues*, *baſſo-relievo's*, *medals*, and other *antique* works; thoſe of *Raphael*, *Polydoro*, and the whole *Roman* chool.

For *architects*, the books that concern their profeſſion, and that are full of demonſtrative figures of the invention of their authors, or copied from the antique.

For *engravers*, a collection of pieces of different manners, either engrav'd or etch'd.

This collection will alſo ſerve to ſhew them the progreſs of engraving from *Albert Durer* to the engravers of our own times, which will include the works of *Marco Antonio*, *Cornelius Cort*, the *Caracci*, *Sadelers*, *Pontius*, *Bolſvert*, *Goltzius*, *Muler*, *Voſterman*, *Viſcher*, and a great many more, who had a particular character, and who by different ways all of them ſtrove to imitate nature, when they did ſomething of their own invention, or pictures of different manners, when they only aim'd at the faithfulneſs of imitation.

In comparing thus the works of all theſe maſters, they may form a judgment, which of them underſtood beſt the management of their tools, of *light*, and the uſefulneſs of *tones*, as it relates to the *claro obſcuro*; which of them in their works reconcil'd delicacy and force beſt, and in their productions were moſt ſenſible and exact, that making a good uſe of theſe lights, they may have the laudable ambition to equal, if not to ſurpaſs theſe skilful maſters.

For the curious in hiſtory and antiquity, every thing that has been engrav'd, belonging to ſacred or profane hiſtory, the fable, the *antique baſſo-relievo*, the *Trajan* and *Antonine pillars*, the books of medals and ſtones engrav'd, and ſeveral *prints* that may be helps to them in the knowledge of thoſe things they would know, or to keep thoſe things that they do know already in their minds.

In ſhort, for thoſe that would form their *goût*, and have a reaſonable tincture of the fine arts, nothing is more neceſſary than good *prints*.

Among all the good effects that may ariſe from the uſe of good *prints*, I ſhall only name ſix, by which we may eaſily make a judgment of the reſt.

The *firſt* is to divert the imagination, in repreſenting viſible things to us by imitation.

The *ſecond* is to inſtruct by a more forcible and ready manner than by ſpeech.

The *third* is to ſhorten the time we employ in recollecting thoſe things that have eſcap'd our memory, and to refreſh it with a glance of the eye.

The *fourth* is to repreſent abſent and diſtant things, as if they were before our eyes, which otherwiſe we could not ſee without troubleſome voyages and great expence.

The *fifth* is to afford us by theſe means an eaſy way of comparing ſeveral things together, *prints* taking up ſo little room; and we may make uſe of ſo great a number, and ſo different.

The *ſixth* is to give one a taſte of good things, and a tincture of the *fine arts*, which no gentleman ſhould be ignorant of.

If the ancients had had the ſame advantage of *prints* as we have; and if they had by the means of *prints* tranſmitted what they had done, that was fine and curious, to poſterity; we ſhould have diſtinctly known abundance of things, of which we have but confus'd ideas in hiſtory: we might then ſee the ſtately monuments of *Memphis* and *Babylon*, and the temple of *Jeruſalem* built by *Solomon* with ſo much magnificence; we might make a judgment of the building of *Athens*, *Corinth*, and old *Rome*, with more certainty than we can now by the poor remains that are left of them.

It is for want of the invention of *prints*, that the machines of *Archimedes* and the elder *Hiero* are loſt; and the knowledge of *Dioſcorides*, plants, and alſo of ſeveral animals, and a great many of the curious productions of nature, which the ſtudies of the ancients diſcovered.

To make PORCELAIN *of* Majorca.

Take calcin'd egg-ſhells, *gum-Arabick* water, and glair of eggs, make all into a paſte, ſhape it in a mould, dry it in the ſun, and it will be very neat.

Reduction of PERSPECTIVE *Draughts out of ſmall into great, and out of great into ſmall.*

As deſigns are made with more eaſe in little than in great, it is but reaſonable that they ſhould be ſo made. This has put me upon giving a method of enlarging ſmall deſigns on the canvaſs.

The method commonly us'd by painters, is to divide their little deſigns, and the canvaſs they intend the large ones to be on, into an equal number of little ſquares, and to transfer what is in the ſquares of the deſign into the correſpondent ſquares of the canvaſs.

But that which follows is approv'd by ſome as eaſier and ſurer.

Provide a ſcale proportionate to the little deſign, and another proportionate to the canvaſs.

To make a deſign, the firſt thing to be determined is the ſcale, which is to fix the meaſures of all the parts of the work.

Thus in the little deſign A, the ſcale B C of five parts, which may be call'd feet, is the firſt thing to be made. From this ſcale are taken the horizon, the heighth and diſtance of the trees, the breadth of the walks, *&c.*

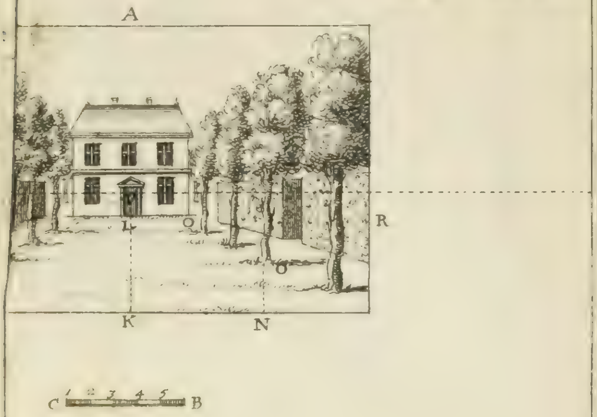
To enlarge this deſign. The method is this; conſider whether or no the draught is to have its natural horizon, *i. e* whether, when the bottom of the painting is on the ground, the horizontal line be the height of the eye, which is about five foot.

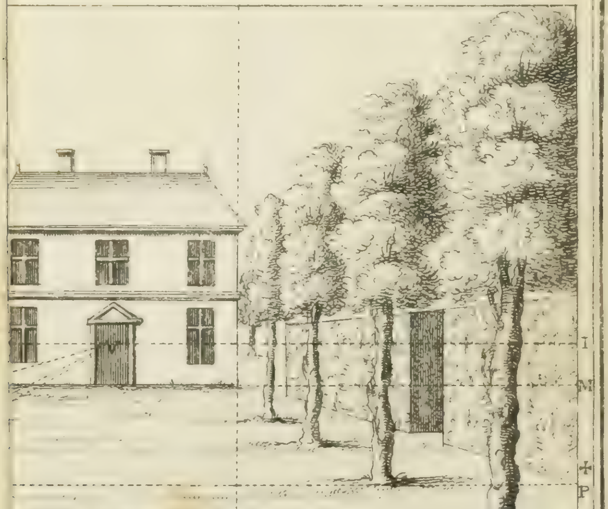
Then of the five diviſions between B and C, make a ſcale of five foot F G; and thus having taken all the meaſures and proportions in the ſmall one, you may transfer them to the great one, after the following manner:

The two ſcales being thus fix'd, the firſt thing to be done is to take into your compaſſes the diſtance between the baſe line D, and the horizon E, and to apply the compaſſes thus opened to the little ſcale B C; noting what number of parts it includes, as here it does five.

Therefore take five diviſions on the large ſcale F G in your compaſſes, and ſet them on each ſide the painting, or large deſign, beginning at the bottom of the cloth H H, and ending in I I.

Vol. II *Plate* XXIIII





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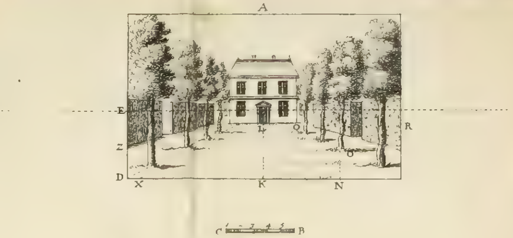
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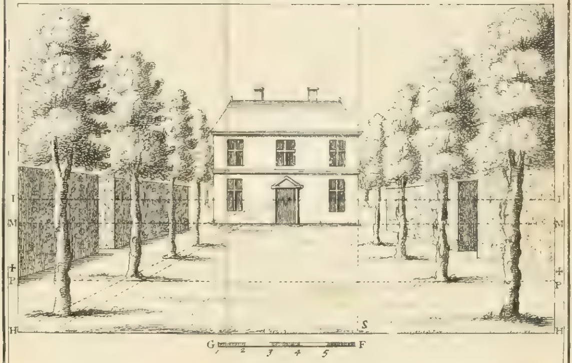
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From the point I I, ſtrike or ſcore a line with a chalk'd or blacken'd packthread.

This line I I will mark the horizon in the large draught.

Then take the diſtance or depth K L of the little deſign, which gives the foot of the houſe, and ſet it on the little ſcale: note how many diviſions it includes, and take the ſame number from the large ſcale, and ſet them on the edges of the canvaſs H M, H M, which you muſt ſtrike with a packthread for the depth of the ſecond tree.

Proceed to take in the little deſign the depth N O, and ſet it on the little ſcale; then take as many in the large one.

Again, N O includes two parts of the little ſcale; accordingly two parts are to be taken on the great one, and ſet off from H to P, which muſt be ſtruck as before.

Do the ſame for all the parallels to the baſe line, as the other trees, windows, roofs, *&c.*

As to the perpendicular to the baſe line, the method is the ſame as for parallels, only they are to be ſtruck or ſcor'd, not from the ſide, but from top to bottom.

Thus for the two corners of the houſe, the interval between them being taken in the compaſſes, muſt be ſet on the little ſcale, and being there found equivalent to ſeven diviſions and an half, as many diviſions muſt be taken from the great ſcale, by which you will have H S T S to be ſtruck as before.

And the like muſt be repeated for all the other perpendiculars, as buildings, trees, palliſades, *&c.*

To find the viſual rays, which are the lines proceeding to the point of ſight V, faſten a packthread to this point V of the length of the painting, and with this ſtrike or ſcore all the rays very exactly.

Thus for the two rays D X, which give the breadth of the trees in the little deſign; take the diſtance D X, ſet it on the little ſcale B C, and take an equal number of diviſions from off the great ſcale, this will give you H Y. To which Points H and Y lines are to be ſtruck with the packthread from the point V.

For the ray of the palliſades take the diſtance D Z, and ſet it on the little ſcale; and take as many diviſions from the large ſcale: by this means you will have H +, which are to be ſtruck from the point V as before.

Every thing in a *perſpective* ordinarily comes under one or other of theſe three ſorts of lines, parallels, perpendiculars, and viſual rays: and having ſhewn how to deſcribe theſe with a good deal of eaſe on the canvaſs, there remains nothing difficult in the reducing ſmall deſigns into great.

As to the reducing great into little, you have only to invert the proceſs; that is, take meaſures firſt on the large ſcale, and diminiſh them proportionably on the ſmall one.

Thus if the horizon of the large deſign were five diviſions of the large ſcale; five diviſions of the ſmall were to be taken for the height of the horizon of the ſmall deſign, and ſo of the reſt.

To render SASHES *tranſparent by glue and varniſh.*

Take glue made of glove-leather very clear, or that made of *vellum*, which is better, lay it on a cloth, and let it dry at leiſure, then give it one laying more, and leave it again to dry; then take *virgin's-wax* and *turpentine* melted together, and lay that on, letting it dry; to a pound of *wax* allow a quarter of a pound of *turpentine*.

FINIS.

Directions to the Binder for Placing the PRINTS in the *Polygraphic Dictionary.*

VOL. I.

Plate			
1	Anamorphoſis in *Letter*	B	between leaves 7 and 8
2	Admiration	C	bet. 1 — 2
3	Compaſſion, *&c.*	M	bet. M and N
4	Dialling	R	bet. 2d and 3d
5	Dialling	R	bet. R and S
6	Drapery	T	bet. 3d and 4th
7	Draw 6 Figures	V	bet. 6 and 7
8	Drawing mixt Forms	V	bet. 7 and 8
9	Draw mixt Forms	V	bet. 7 and 8
10	Drawing	X	bet. 4 and 5
11	Drawing in Perſp.	X	bet. 2 and 3
12	Ears	X	bet. 6 and 7
13	Enamell. Furnace	A a	bet. 1 and 2
14	Engraving	A a	bet. 6 and 7
15	Eyes	D d	bet. 1 and 2
16	Faces	D d	bet. 2 and 3
17	Feet	D d	bet 5 and 6
18	Feet	D d	bet. 5 and 6
19	Furnaces	F f	bet. 7 and 8
20	Garden in Perſpect.	G g	bet. 1 and 2
21	Furnace for Stain. Glaſs	I i	bet. 1 and 2
22	Group.	M m	bet. 1 and 2
23	Hands	M m	bet. 5 and 6
24	Hands	M m	bet. 5 and 6
25	Heads	M m	bet. 7 and 8
26	Heads	M m	bet. 7 and 8
27	Height	N n	bet. 1 and 2
28	Height	N n	bet. 1 and 2
29	Horror	N n	bet. 4 and 5
30	Houſes	N n	bet. 5 and 6

Directions to the Binder for Placing the PRINTS in the *Polygraphic Dictionary*.

VOL. II.

Plate			
1	Japan Fig. in *Letter*	B	between B and C
2	Japan Fig.	C	between 4 and 5
3	Inſtruments for Glaſs	D	bet. 3 and 4
4	Landskips	E	bet. E and F
5	Laughter	F	bet. 2 and 3
6	Legs	F	bet. F and G
7	Drawing Machine	L	bet. L and M
8	Furnace for Pearl	P	bet. 6 and 7
9	Perſpective	Q	bet. 3 and 4
10	Perſpective	Q	bet. 4 and 5
11	Perſpective	Q	bet. 5 and 6
12	Perſpective	Q	bet. 5 and 6
13	Perſpective	Q	bet. 5 and 6
14	Perſpective	Q	bet. 5 and 6.
15	Perſpective	Q	bet. 7 and 8
16	Scorn, *&c.*	X	bet. 4 and 5
17	Shadow of the Sun	Y	bet. 2 and 3
18	Shadow by Torch-light	Y	bet. 3 and 4
19	Double Shadow	Y	bet. 3 and 4
20	A Street in Perſpect.	B b	bet. 3 and 4
21	Tranquility	D d	bet. 5 and 6
22	Trunks of Bodies	betw. D d	and E e
23	Walks	G g	bet. 7 and 8
24	Reduction of Figures	L l	bet. 3 and 4

N. B. Our firſt deſign being to have engraven the marks or characters of the moſt noted *Engravers*, &c. on a Copper-Plate; but after the working off a few of the firſt Sheets, thinking it better to print them with their particular articles; we deſire the Reader to take notice that he will find the firſt 12 engraven in the Copper-Plate, Number I.

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8. Grandeur of th
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9. Philoſophical Con
Regnault of the Society o

10. *Voltaire*'s Hiſtory o

11. ——— Letters concer

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12. The Engliſh Saxon Gram
of Northern Antiquities, by *E. Elſt*

13. The Anatomy of a Human
Monſ. *Winſlow*, tranſlated by *G. Doug.*

14. The Hiſtory of Printing, by *Sam.*

FOLIO.

15. The Works of the Learned *Joſep*
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s. 3. The French Churches Apology for the Ch
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